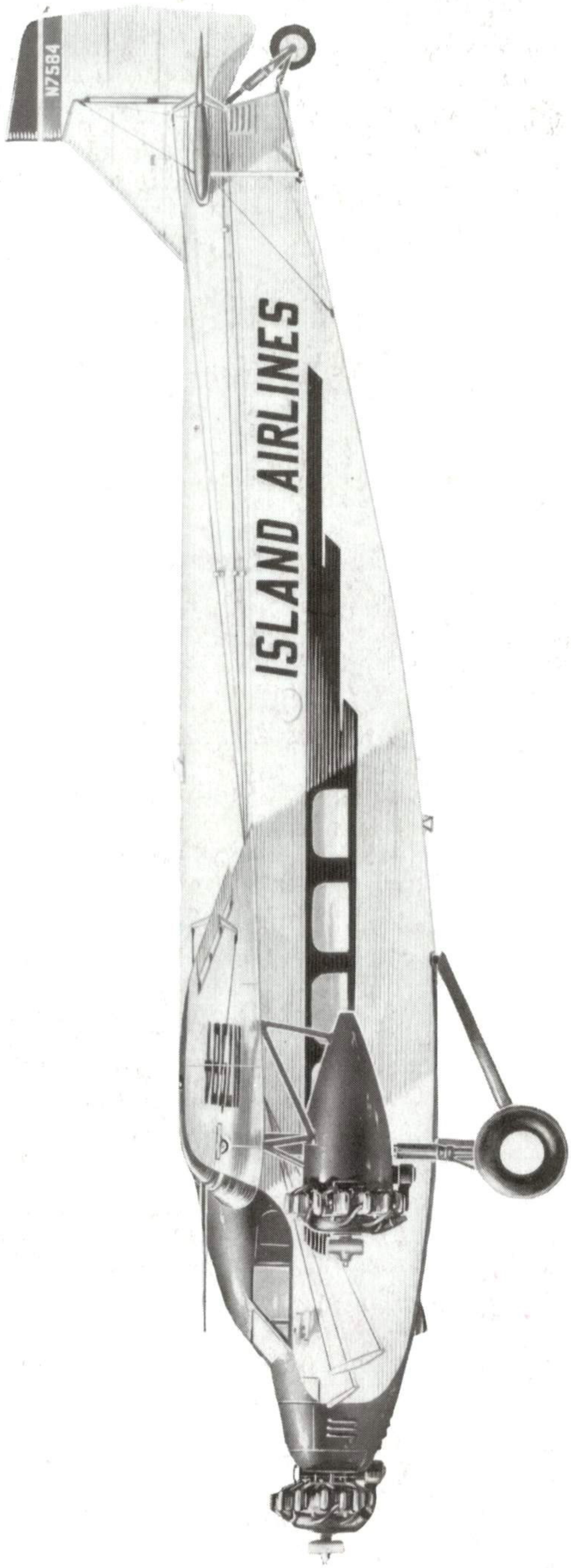
PROFILE PUBLICATIONS

The Ford Tri-Motor



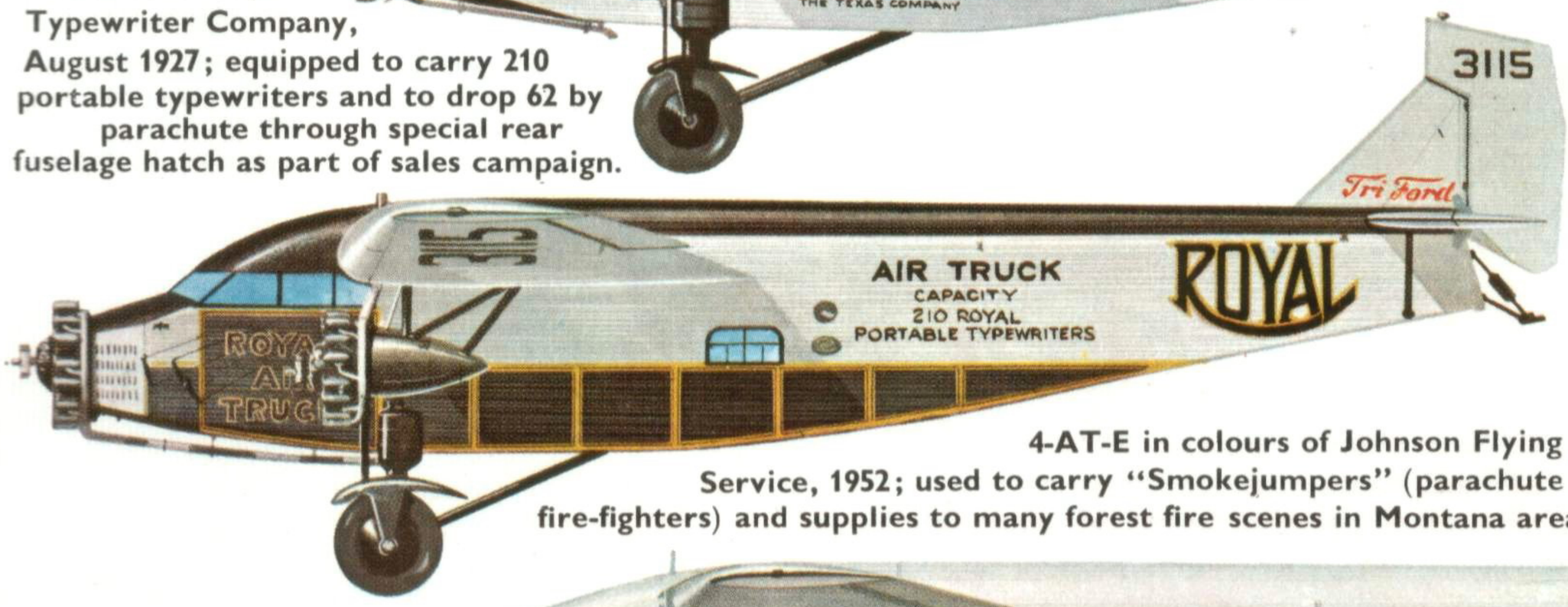
NUMBER 156

RETAIL PRICE
UNITED KINGDOM TWO SHILLINGS
UNITED STATES AND CANADA 50 CENTS

5-AT-B of Colonial Division, American Airways, April, 1931. NC9683 currently on American Airlines exhibition tours and is destined for eventual donation to National Air Museum.

Texaco Oil Company 4-AT-A flown by Frank Hawks; company V.I.P. and guest flights.

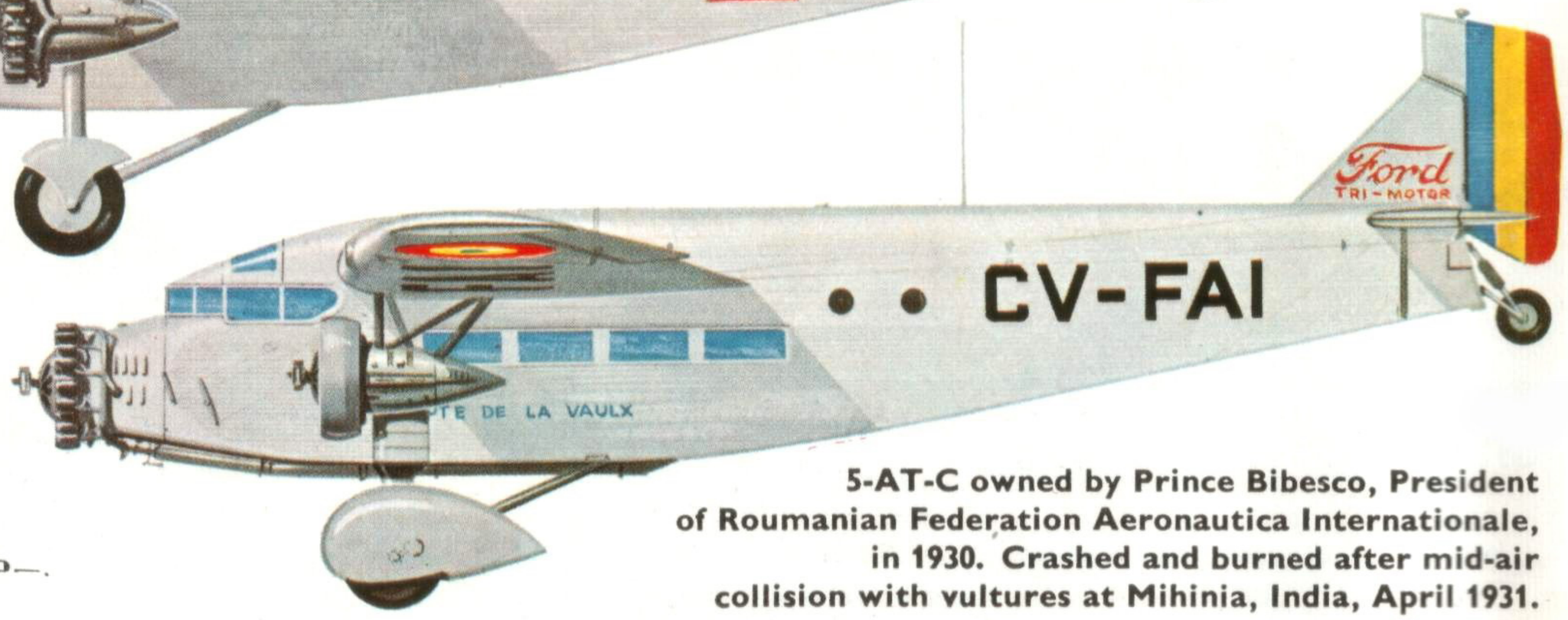
4-AT-A of Royal Typewriter Company, August 1927; equipped to carry 210 portable typewriters and to drop 62 by parachute through special rear fuselage hatch as part of sales campaign.



4-AT-E in colours of Johnson Flying Service, 1952; used to carry "Smokejumpers" (parachute fire-fighters) and supplies to many forest fire scenes in Montana area.

Roumania, four wing positions

5-AT-C cargo aircraft of AVENSA-Venezuela, 1943.



5-AT-C owned by Prince Bibesco, President of Roumanian Federation Aeronautica Internationale, in 1930. Crashed and burned after mid-air collision with vultures at Mihinia, India, April 1931.

© WARRD—.

The Ford Tri-Motor

by William T. Larkins

The design of an aircraft is not always the deciding factor in its success. Quite often, as with the Ford Tri-Motor, a series of supporting circumstances and the accident of time and place produce "a legend in its own time".

The basic design of the Ford Tri-Motor combined the shape and size of the Fokker tri-motor with the type of corrugated skin all-metal construction used by Junkers. Thus the Ford, in many ways, was far more of a German design concept than it was American. It was the application of a modified assembly line production by the world's largest automobile manufacturer to a good design, backed by extensive advertising and publicity concerned with safety, at a time when such dependability and safety was crucial to the continued development of American air transportation, that put the Ford ahead of all of its competitors.

The value of the corporate name "Ford Motor Company" cannot be under-estimated and the results are best indicated by a study of the contemporary transports that never reached production status—much less are still flying after 40 years. William B. Stout, most often credited with the creation of this airplane, has stated that he believed his greatest contribution to aviation was his successful effort to interest Henry Ford in aviation and aircraft production.

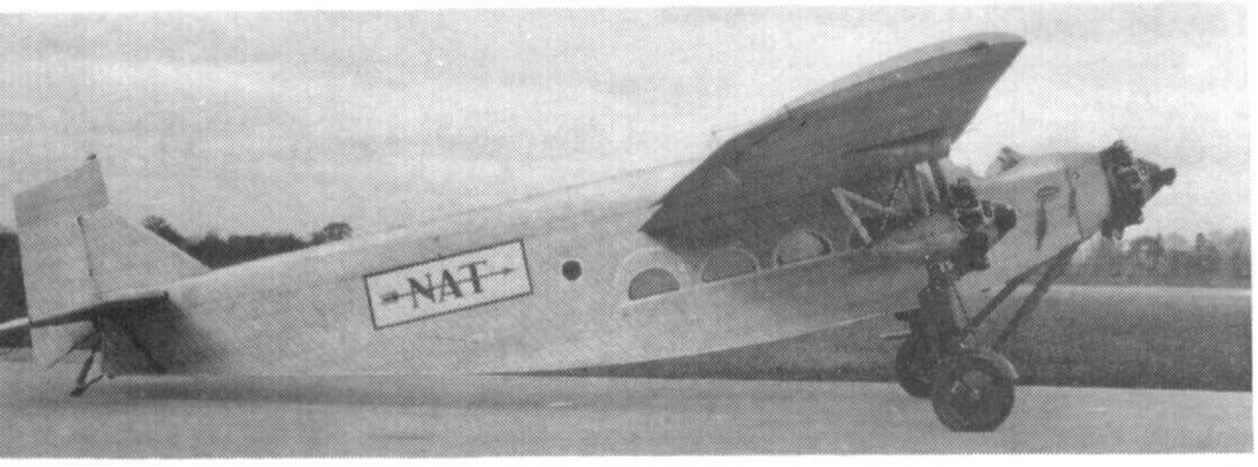
A tremendous number of people in the United States had their first airplane ride in a Ford Tri-Motor, and almost the entire passenger airline system of the United States was built with this airplane. Acceptable air travel was bound to come sooner or later, but the Ford moved the timetable ahead by several years. The "Tin Goose", as it was unofficially named as early as 1929, made a unique and lasting contribution to civil aviation. One hundred and ninety-eight Tri-Motors were produced between the flight of the first 4-AT, on 11th June, 1926 and the test flight of the last airplane on 7th June, 1933. To be technically correct one must add the initial 3-AT, and the 40-passenger 14-A, to make a grand total of 200 three-engine airplanes built by the Ford Motor Company. In addition one 5-AT airframe and wing was used to produce the single engine 8-AT freighter. The standard airline 5-AT model sold for $55,000 new. The frequently published price of $50,000 is an average based on the range from $42,000 for the light-weight 4-AT to $65,000 for the most luxurious 5-D Club model.

Over 100 airlines have flown the Ford in the U.S., Canada, Mexico, Central and South America, Europe, Australia and China. Many more companies have operated Fords for executive transportation, sales promotion, flight instruction and heavy duty freight hauling. The 4-AT was popular with barnstormers in the late 1920's and early 1930's and its ability to land on almost any unprepared dirt strip was greatly

The power and beauty of the Ford Tri-Motor is characterized by this photo of John Louck's 5-AT-C (N414H) taken just prior to its commemorative transcontinental flight in June 1963. Note the BT-13 engines and props and Lockheed 18 wheels.
(Photo: W. T. Larkins)

The first Tri-Motor, model 3-AT, designed and built by Bill Stout in 1925. It was a modified and enlarged 2-AT, replacing the single Liberty with three Wright J-4's of 200 h.p. each.
(Photo: Ford Archives)

The 4-AT-A, first production model. This plane, the fifth built, shows the early design with engine exhaust going up through the wing. A 1927 photo showing early Stout Air Services.
(Photo: Ford Archives)



The second Tri-Motor, model 4-AT, built in 1926. Note the open cockpit and redesign of the wing engines.
(Photo: Ford Archives)

appreciated by pilots looking for small town citizens with money in their hands eager for their first ride in an airplane.

The Ford Tri-Motor has been looped, rolled and flown upside down. Many an unbeliever was converted by Harold Johnson at the National Air Races flying NC9610. If a snap roll at 800 feet didn't do it, then surely they were convinced by three low level loops ending in a one wheel landing!

The Ford has flown on wheels, floats and skis. It has been used to carry neon signs for night sky advertising, as well as searchlights and public address systems; it has been used as a tanker for aerial refuelling; it has served as a steady platform for parachutists—both pre-war military and post-war Forest Service fire fighters. Since World War II it has been used widely as an agricultural aircraft for spraying crops, grass and forests. Two have been converted as "borate bombers" and used on forest fires. But its greatest fame has come from two distinct operations. One, for which it was designed, has been as a sturdy, reliable passenger transport. The second, for which it was not designed, has been as a remarkable heavy duty freight carrier. Its career in this regard far surpasses any other pre-war American transport except the DC-3.

AN END TO WOOD AND WIRE

Bill Stout, with his Liberty powered 2-AT mail plane, had interested Henry Ford in his activities by 1925. After purchase of the Stout Metal Airplane Company by Ford, development started on the first tri-motor design. Stout, assisted by his engineers Prudden, Towle, Koppen, Lee and others, revised the 2-AT design to use a larger wing and three engines. Unfortunately the design was a failure and Henry Ford, angered by this turn of events, replaced Stout by Harold Hicks as chief engineer of the new aircraft company.

Shortly afterwards the 3-AT and the small factory were destroyed in a fire. A new plant was immediately started and a new design, the 4-AT, emerged under the direction of Harold Hicks and Tom Towle. This open cockpit tri-motor, with the engines below the wing, flew for the first time on 11th June, 1926.

Within a short time the 4-AT-B emerged, a larger and heavier 'plane with a greater wing span that has the solid "Ford" look that we are accustomed to seeing. From this time on, with the help of a wave of national enthusiasm generated by Lindbergh's Paris flight, development was steady and continuous. Jack Maddux, a Los Angeles Lincoln car dealer, agreed to start an airline to San Francisco if the planes were reliable enough to fly over the mountains to California. Larry Fritz proved this with the seventh Tri-Motor, delivering it to Los Angeles in June 1927. Many more followed until Maddux Air Lines was an even bigger Ford operator than Bill Stout's pioneer Stout Air Services. In October 1930 Maddux joined its Fords with those of Transcontinental Air Transport to form Transcontinental and Western Air Inc., the original TWA.

The increasing emphasis on airline use, together with the availability of the new Pratt & Whitney Wasp engine of 420 h.p., led to the larger and more powerful 5-AT model in the summer of 1928. Under the direction of Harold Hicks a new group of engineering supervisors including Buchner, Dart, Karcher, Koppen, Ross, Wright and Van Zand worked on the steady refinements and improvements that ended in the 5-AT-D. This "high wing" Ford, with eight inches more head room in the cabin, was the final Tri-Motor design produced in 1931.

Thus America's first all-metal transport came into being and remained on the scene until the arrival of

A brand new 5-AT-C at the factory in September 1930. National Air Transport, predecessor of United Air Lines, flew a number of Fords.
(Photo: Ford Archives)

This Maddux Air Lines 4-AT-B, parked alongside a Standard Airlines Fokker tri-motor, shows the marked similarity between the two planes.
(Photo: UC Bancroft Library)

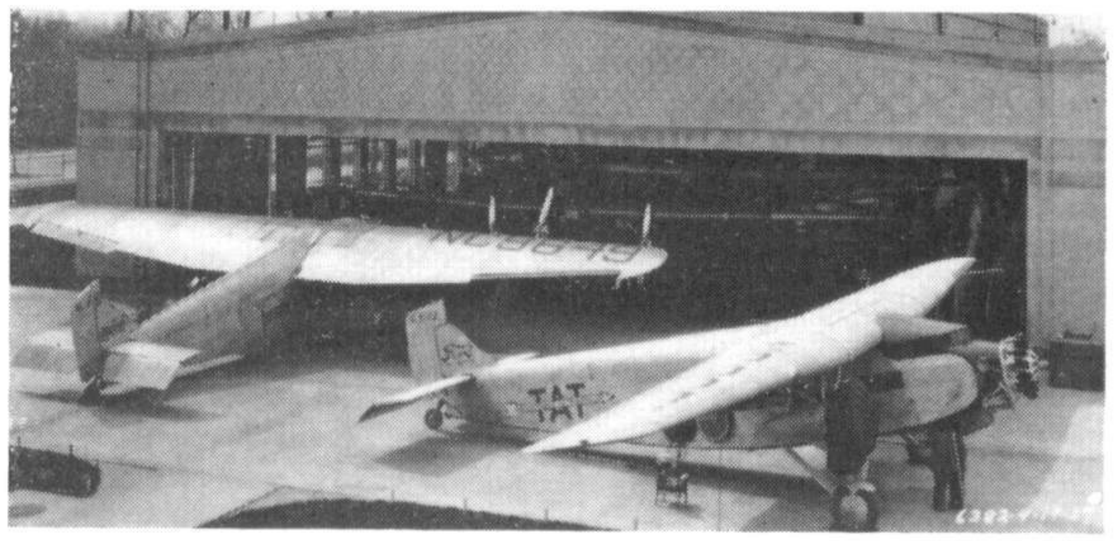
The ultimate in the Ford design was reached in the 5-AT-D of 1931. The wing baggage-mail bins were a useful addition and were later retrofitted to earlier TWA Fords.
(Photo: Boeing Airplane Co.)

the faster Boeing 247 and Douglas DC-2. But much more than just an airplane had been created; due to the vision and support of Edsel Ford, William Mayo and Bill Stout, many other important items had been developed. Ford built a model airport and aircraft factory, paved a runway for the first time, built a model passenger terminal and airport hotel, developed radio communications and an airway radio beacon system. One of the most unusual things developed was a unique Ford training school for pilots. As part of their continuing programme of developing safe flying the Ford Motor Company publicly stated in January 1929: "Purchasers of planes are welcome to send their own men to our school for this special training, if they meet the requirements. But we must ask them to consider our decision of their fitness final. So important do we regard this provision, that we reserve the right to decline to deliver a Ford plane unless the pilot who will fly it meets with the approval of the officials of our training school."

CONSTRUCTION

The Ford is an inherently stable airplane and much of this is due to its extremely large and thick wing. The whole concept of three engines was developed as a safety factor, not for better performance. The Ford was designed to fly well on two engines, and maintain level flight on one engine. It performed as planned except during engine failure on take-off. Due to the lack of controllable pitch props, not yet invented in the late 1920's, a severe drag on the windmilling dead engine caused several fatal crashes. Despite this hazard the tri-motor concept has proven itself many times—not the least of which has been the safe landing of a Ford Tri-Motor which has had a vibrating wing engine fall clear of the plane.

The rust-resistant quality of the "Alclad" alloy used on the Ford skin has been one of the factors contributing to its long life. "Alclad" combines the corrosion-resisting quality of pure aluminium with the strength of duralumin. A sheet of "Alclad" is something like a sandwich. The two surfaces are corrosion-resistant, 99·7% pure aluminium, and



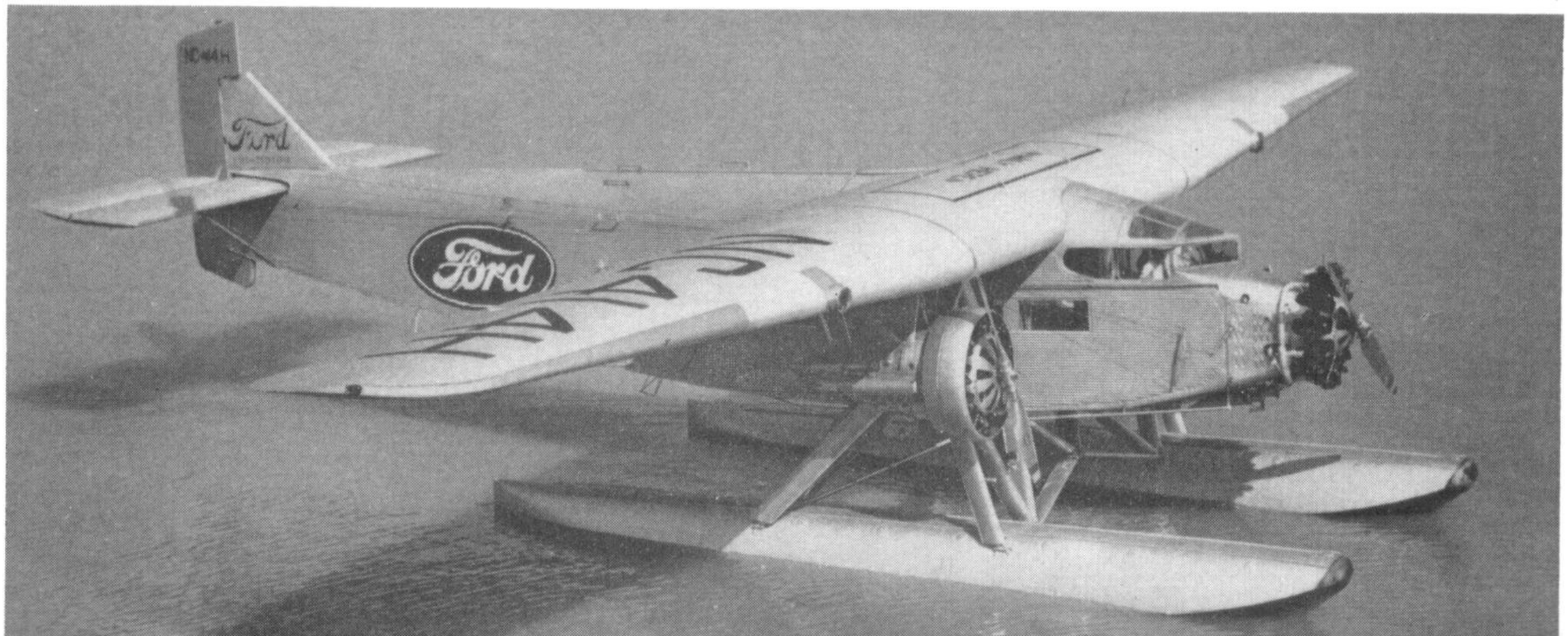
Two new Ford 5-AT-B's in front of the factory at Dearborn in April 1929. N9649 was lost in the Mt. Taylor crash five months later; N9651 is currently being flown by owner-pilot G. Moxon at Santa Monica, Calif. (Photo: Ford Archives)

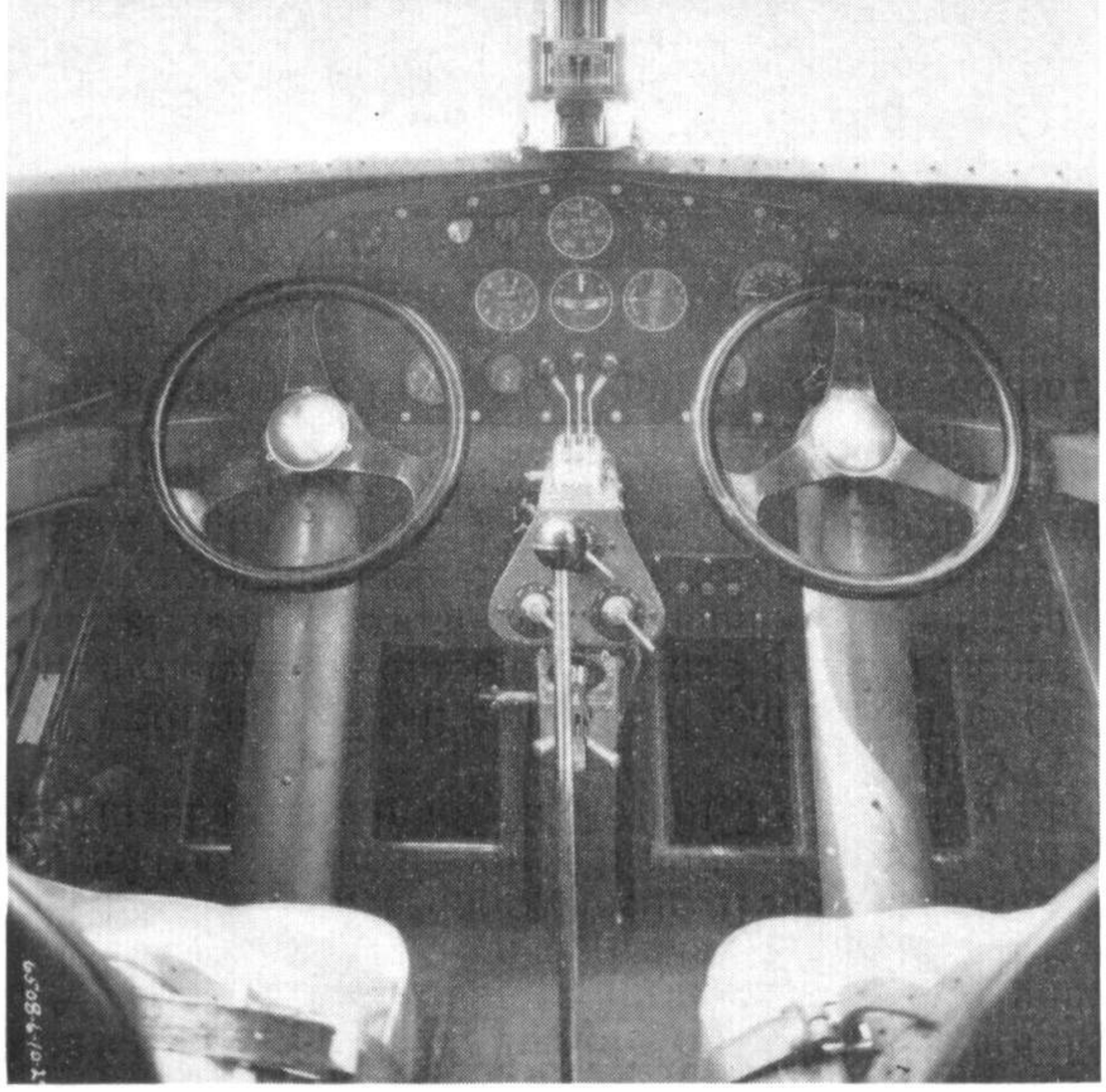
between these surfaces is the strength-providing duralumin. It is light in weight but has the strength of steel. An unusual quality is that it resists corrosion at its edges, or where the rivet holes expose the duralumin core. In addition all unexposed parts of the Ford were treated with a moisture-proof, protective lacquer. A graphic example of the value of this type of metal construction can be seen by examining Admiral Byrd's 4-AT-B in the Henry Ford Museum and remembering that this plane was left buried in the ice for over a year, at the South Pole, before it was brought back to Dearborn.

MILITARY

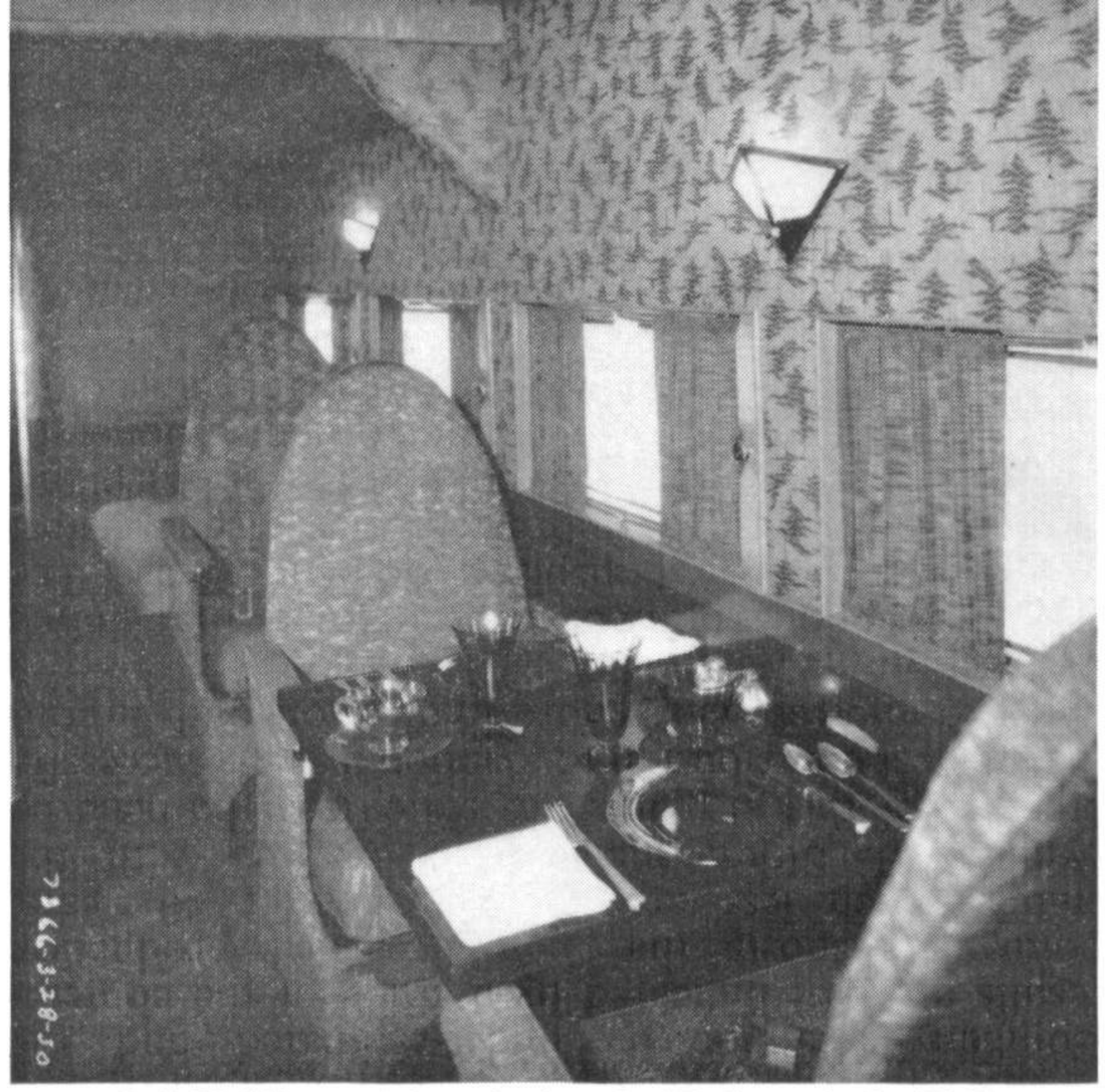
The U.S. Army Air Corps purchased 13 Fords as military transports, and the U.S. Navy and Marine Corps bought an additional nine. None were ever used as armed combat planes in the manner of the Junkers Ju 52/3m, but a civilian-registered (NX9652) bomber was developed from a modified 5-AT-C airframe to be entered in a design competition. Various changes were made, including the installation of a single pilot's seat, incorporating two open-air gunners' pits, internal bomb racks and a modified

Several Fords were operated on twin floats. 5-AT-CS, NC414H, was unsuccessfully demonstrated to the U.S. Navy as a torpedo bomber in 1930.
(Photo: Larkins Collection)





The pilot's cockpit of the Ford was simple and direct. The "Johnson Bar" in the centre was the hand-operated brake control. Instruments for the wing engines were mounted outside on an engine nacelle strut. (Photo: Ford Archives)



Special "Club" models of the 5-AT-C and 5-AT-D were available for up to $15,000 extra. Photo shows interior of CV-FAI, a 5-C Club plane for Prince Bibesco.
(Photo: Ford Archives)

tail. This plane, known as the XB-906-1, crashed on 19th September, 1931 killing Leroy Manning, the chief test pilot of the Ford Motor Company.

The early 4-AT's purchased by the Army were designated C-3's. The later 4-AT-E models were ordered as C-3A's but delivered as C-9's. One airline 5-AT-B type was delivered as a C-4, and four new 5-AT-D's were designated C-4A's. The Navy Fords were designated XJR-1, JR-2, JR-3, RR-4 and RR-5. When the Navy changed from their use of the letter "J" for Utility to the use of "R" for Transport, in 1931, the remaining JR-3's were redesignated RR-3's.

In addition to these, Fords flew with the Royal Canadian Air Force, Royal Australian Air Force, Spanish Air Force, Colombian Air Force, and one with the Royal Air Force. The latter, 5-AT-107, was impressed into service with No. 271 Troop Transport Squadron in June 1940. Its R.A.F. serial number has now been reported to be X5000.

"RETIREMENT" AND REBIRTH

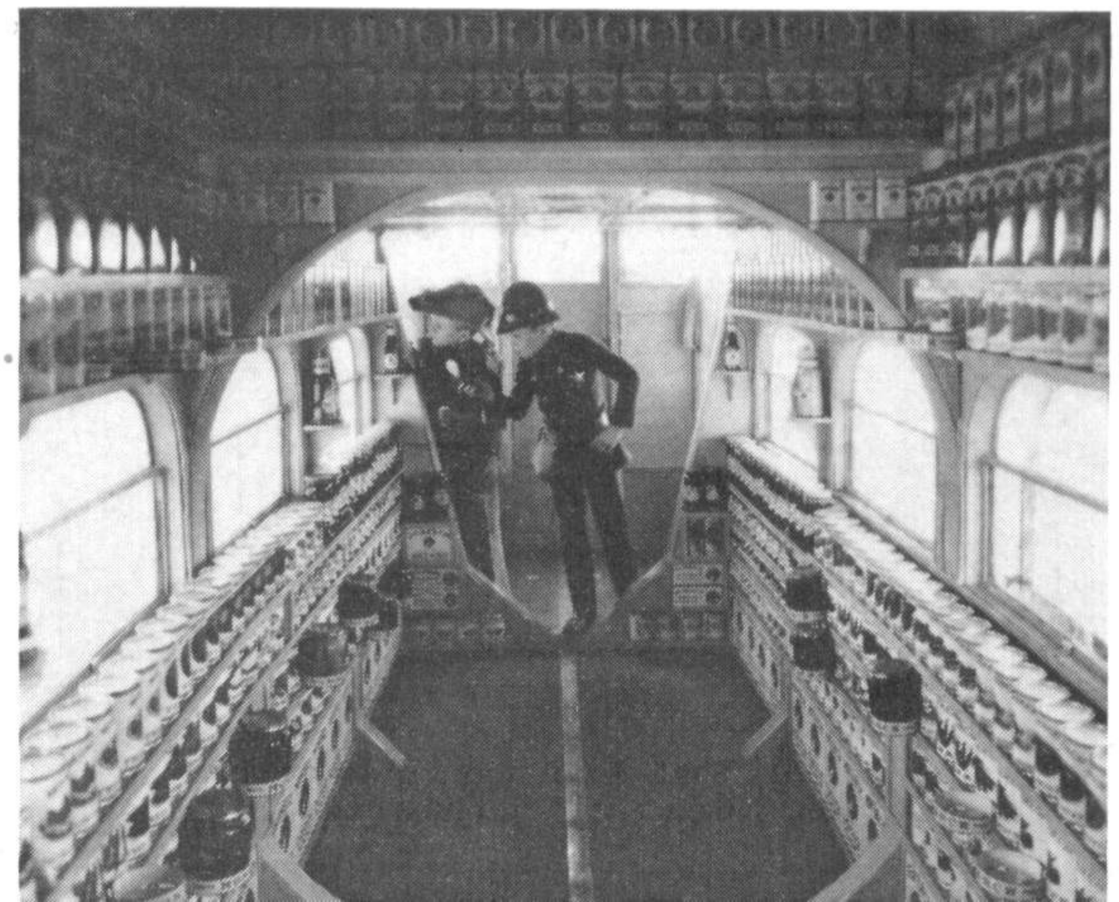
The life span of the average airplane in the 1920's was relatively short and so it is not surprising to find the Ford Company timidly stating in their 1929 advertising that "no Ford plane has yet worn out in service", and "Consequently we now feel buyers of Ford planes run little if any danger that the planes will become obsolete before they have completed their period of usefulness—a period which we now know to be not less than four years". Later, in 1932, they admitted that when the 5-AT-B's were built that their estimated life was 2,500 flying hours. But TWA had already put 3,000 hours on each plane and was sending them back to the factory to have wing mail bins installed in the belief that they were good for another 2,000 hours.

Finally, in late 1934, TWA did replace their fleet with DC-2's and this prompted an article titled "TWA Ford Tri-Motors Retired" which began: "Like faithful old fire-horses, unshod and retired to a life of ease amid green pastures, a fleet of veteran tri-motored airplanes is facing retirement after almost a decade of active service on the mid-transcontinental airway between New York and Los Angeles."

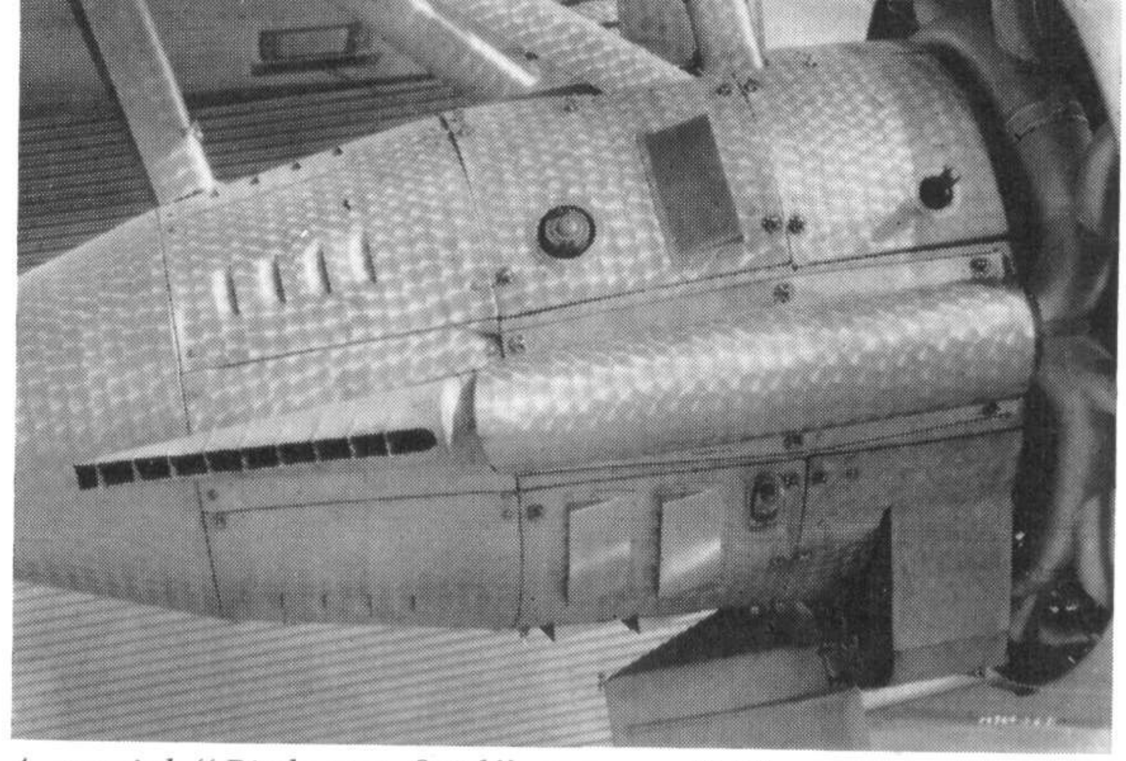
Later, in 1939, John Collings, pioneer Ford test pilot and airline executive, wrote an article "Farewell, Tin Goose" in which he said: "I know the end is in sight for the old girl" and "She was and is a thoroughbred, but her days are almost up".

Unusual interior of 4-AT-B NC7863. This "flying grocery store" was flown to cities throughout the middle west to display the variety of canned foods sold by Monarch Foods in 1929-1931.
(Photo: Ford Archives)

Passenger compartment of a standard airline 5-AT-B of 1929. The wicker seats were soon replaced with metal seats.
(Photo: T.W.A.)



The 1931 Detroit Air Show featured three Fords indoors including the 13-A on the left, and the new single engine 8-AT on the right. The 8-AT is fitted with a Hispano-Suiza in this photo; it was finally delivered to PAA with a Wright Cyclone.
(Photo: Ford Archives)



A special "Birds-eye finish" was available at extra cost to wealthy Ford owners. This engine nacelle of 5-AT-97 shows the circular rubbed pattern put on the metal skin before it was cut and formed.
(Photo: Ford Archives)

But the rugged Tin Goose fooled them all. Far from retiring to green pastures she entered the hardest working period of her life. Stout's dream of the value of metal construction was only beginning to pay off and even he never dared to predict that a Ford Tri-Motor would still be flying at 39 years of age and with over 22,900 hours to its credit!

The man who gave the Ford its second life was Lowell Yerex, pioneer founder of the Central American airline TACA (*Transportes Aereos Centro-Americanos*) with headquarters at Tegucigalpa, Honduras. Together with its subsidiaries TACA-Guatemala, TACA-Costa Rica and TACA-Nicaragua the airline flew a known number of 27 different 5-AT's. Some started flying freight and passengers as early as 1934, with others being added through the 1930's. From 1942 through 1947 sixteen Fords were operated under Nicaraguan registry. Most, if not all, of these had large cargo doors cut into the side and sliding or removable hatches installed in the top of the fuselage to enable the loading of heavy machinery. In addition to the flying of freight at least one plane was modified with a 600-gallon fuselage tank to carry diesel oil and flew 2,400 gallons per day to the La Luz Mine. At least six TACA Fords were lost in crashes during this period of rugged and hazardous flying.

For sixteen years, after World War II, 5-AT-11 (XA-HIL) flew steadily between Mazatlan and the San Luis Mine at Tayoltita, Mexico. This plane single-handedly built a world wide reputation for dependability and service that has not been equalled by any other Ford. During this time she flew 5,376 hours and carried more than 65,000 passengers, 436 tons of mail, 4,790 tons of express and 2,165 tons of freight. Operating under the general management of Bert Brown, and known as TATSA, this little airline provided the only transportation in and out of the mine during eight months of the year. Captain Jesus Delgadillo, of TATSA, flew this Ford for a total of 4,477 hours without incident—a remarkable record of mountain flying from a single 1,200 ft. runway buried at the base of a box canyon with 4,000 foot walls.

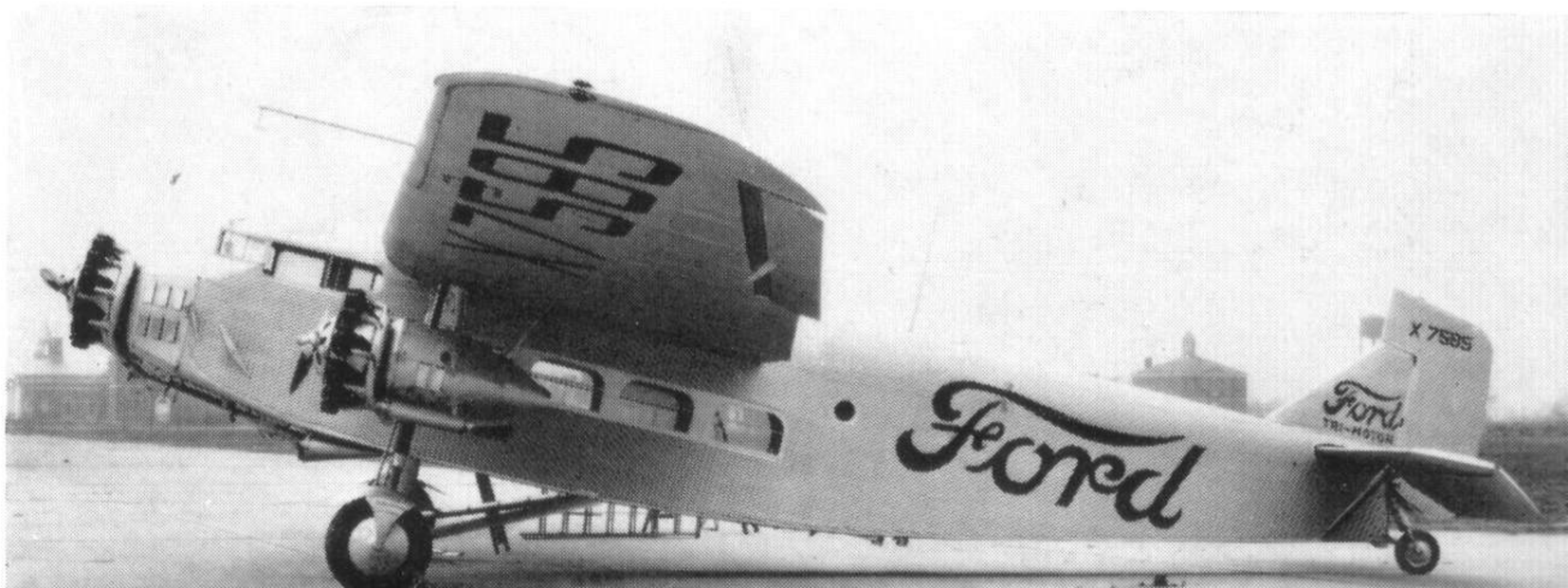
AIRLINE NOSTALGIA

Starting in July 1949 the airlines began to fly cleaned-up and freshly painted Fords on various commemorative flights. Trans World Airlines was the first when they leased NC9612 and painted it as the "City of Los Angeles" for the 20th anniversary of their first transcontinental flight.

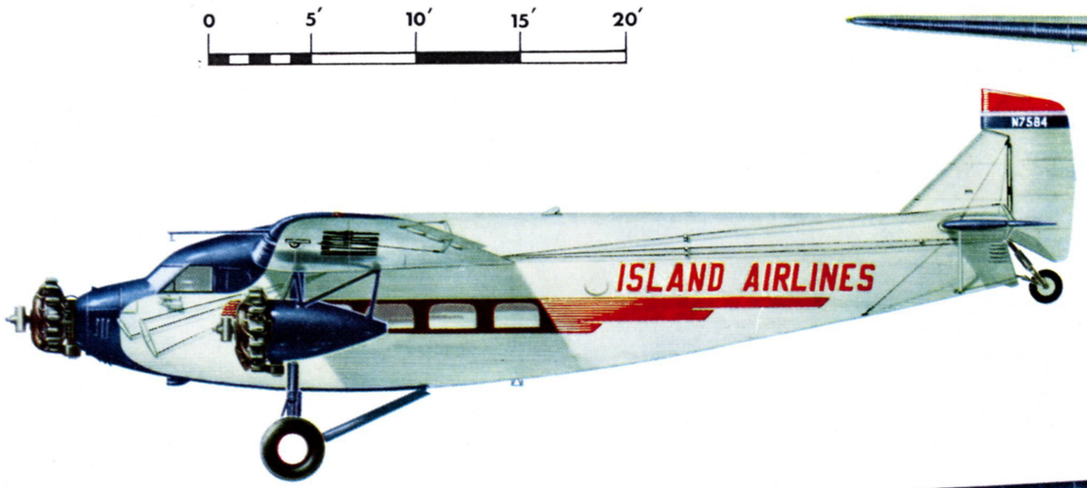
Northwest Orient was next with a ten-day flight from New York to Seattle by 5-AT-58 (NC8419 leased from Johnson Flying Service) in honor of NWA's 30th anniversary. Gleaming white in her new paint, and sporting the original NWA markings, she attracted big crowds at every stop. The final tribute was paid at Seattle-Tacoma airport when a throng of admiring spectators turned out in a cold rain to welcome the Tin Goose piloted by Captains L. S. DeLong and Joe Kimm—both of whom had flown Fords for NWA in 1928–1929.

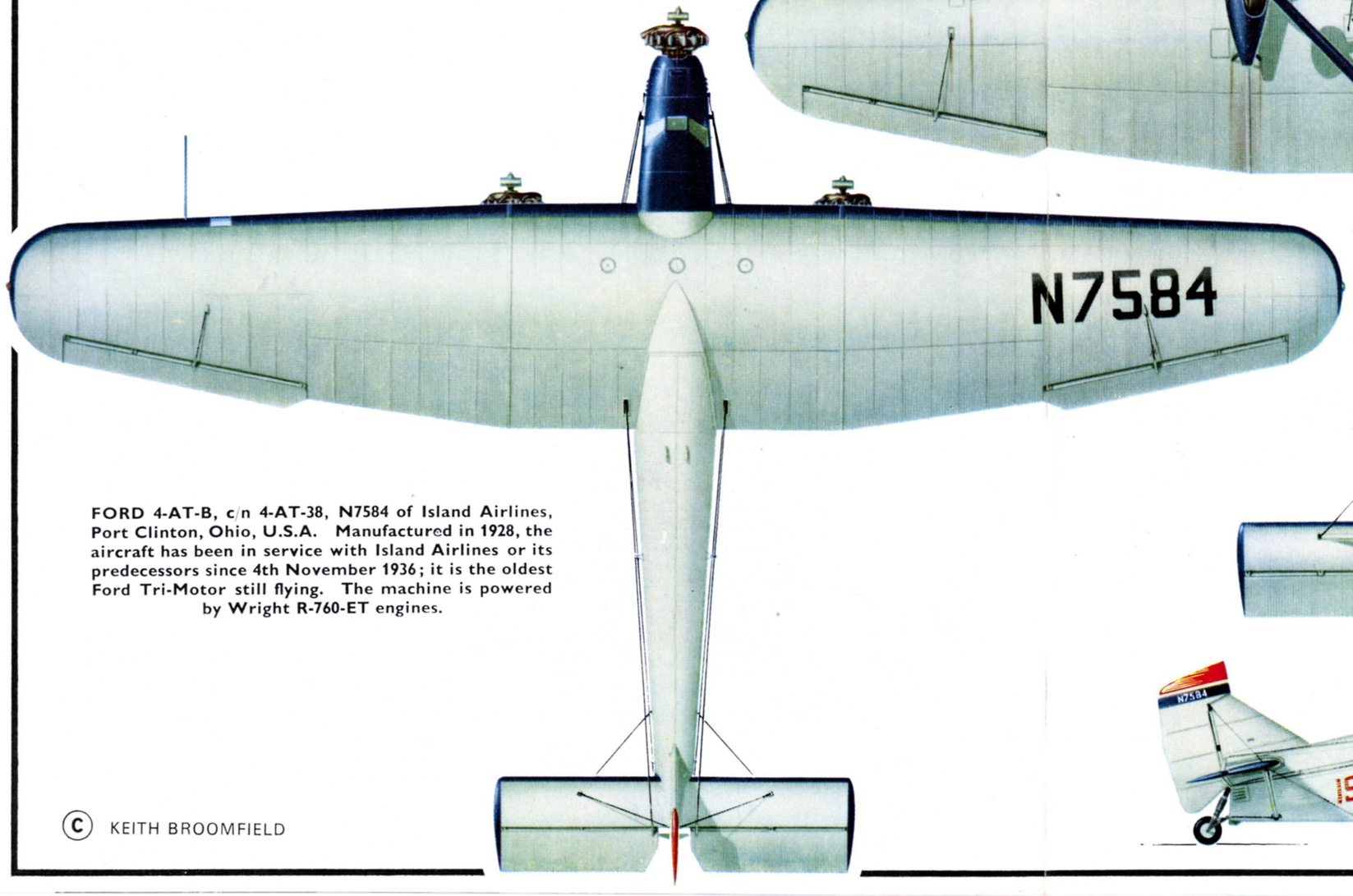
In late 1962 American Airlines bought 5-AT-39, a plane that they had originally operated, and sent it to their Tulsa, Oklahoma shops for a complete overhaul and rebuilding. Under the watchful eye of Floyd Tohline a crew of 24 top mechanics went to work to produce the most beautiful and immaculate Ford now flying. American had announced their gift of this plane to the National Air Museum but an agreement was reached whereby AA may fly the plane until the new museum building is completed and so a programme was started of leisurely visits to cities around the United States to demonstrate the Ford. in 1963, 1964 and 1965 an average of 400 hours per year (32,000 miles per year) were flown by N9683. Ten thousand guests were given courtesy rides and it is estimated that over three million people came out to see the plane while it was on static exhibition in the various cities visited.

In June 1963 Trans World Airlines, observing the fantastic reception that N9683 was receiving from the public, hastily leased N414H from barnstormer John Louck and rushed it to the West Coast to carry a press crew from Los Angeles to Philadelphia to celebrate the 25th anniversary of the Civil Aeronautics Act of 1938. It was a rough 54 hours flying time and led to such critical articles as the one published in a



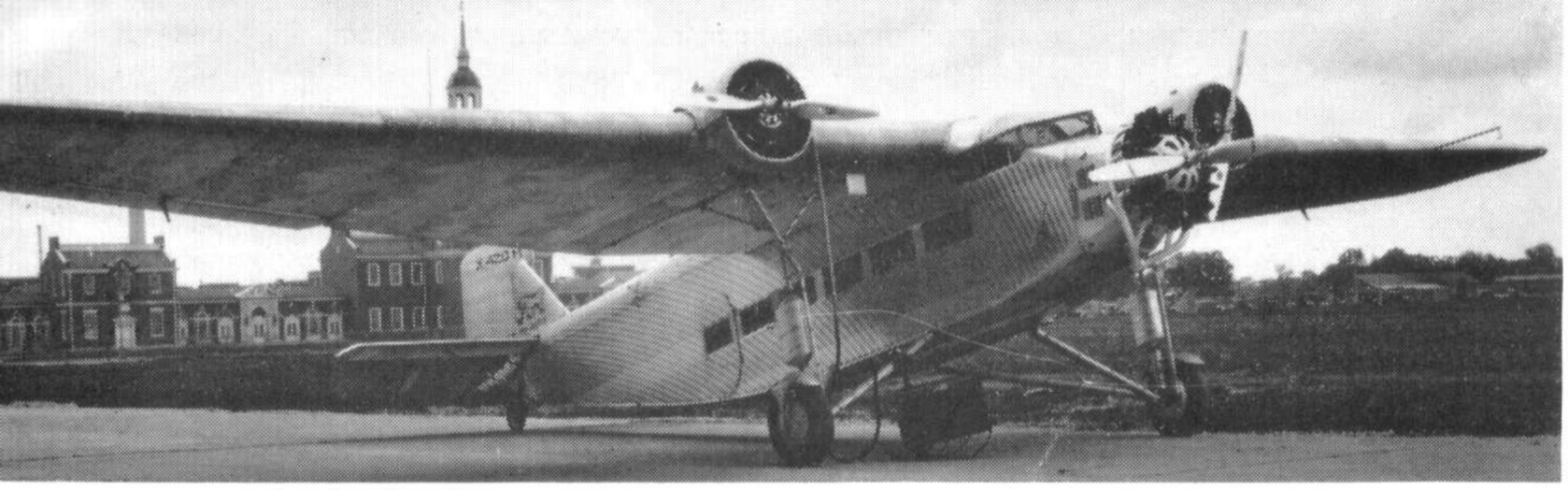
The single 9-A was a 4-AT-E with Pratt & Whitney Wasp Junior engines, serial numbers 1, 3 and 4.
(Photo: Ford Archives)





FORD 4-AT-B, c/n 4-AT-38, N7584 of Island Airlines, Port Clinton, Ohio, U.S.A. Manufactured in 1928, the aircraft has been in service with Island Airlines or its predecessors since 4th November 1936; it is the oldest Ford Tri-Motor still flying. The machine is powered by Wright R-760-ET engines.

© KEITH BROOMFIELD



The proposed 5-AT-E model was abandoned after flight tests with NX420H proved the installation of the engines in the wings to be inferior.
(Photo: Ford Archives)

national magazine titled "Last gasp of the Tin Goose: In a ramshackle museum piece, a dozen volunteers make a desperate journey down memory's airlane".

Despite such insults N414H kept flying and carrying some 15,000 passengers per year on Louck's scenic flights. Then, in 1965, a new adventure was added when American Airlines bought her, dressed her up with 1930 markings, and put her on exhibit at the New York Worlds Fair.

A news story in July 1965, stating that juvenile delinquents had broken into the Fair grounds and wrecked N414H, sounded at first like the end of this famous airplane. Ironically it turned out to be exaggeration based on modern jet-age innocence; all of the "damage" was the collection of dents and bruises inflicted years before during those rough days of flying chicle in Guatemala. N414H is now back in the AA hangar at Tulsa, smiling to herself, and awaiting the next chapter in a long and varied life.

FORD TRI-MOTORS EXISTING IN 1967

c/n	Reg.	Model	Owner
5-AT-39	N9683	5-AT-B	American Airlines, New York City, N.Y.
5-AT-74	N414H	5-AT-C	American Airlines, New York City, N.Y.
4-AT-15	N4542	4-AT-B	Henry Ford Museum, Dearborn, Michigan.
4-AT-69	N8407	4-AT-E	Ford Trimotor Inc., Ottawa, Kansas.
4-AT-10	N6077C	4-AT-A	Eugene Frank, Caldwell, Idaho.
5-AT-8	N58996	5-AT-B	Bill Harrah, Reno, Nevada.
4-AT-38	N7584	4-AT-B	Island Airlines, Port Clinton, Ohio.
4-AT-42	N7684	4-AT-B	Island Airlines, Port Clinton, Ohio.
5-AT-11	N1629M	5-AT-B	Island Airlines, Port Clinton, Ohio.
4-AT-55	N9612	4-AT-E	Johnson Flying Service, Missoula, Montana.
4-AT-46	N7861	4-AT-E	Johnson Flying Service, Missoula, Montana.
5-AT-34	N9651	5-AT-B	Gaylord Moxon, Santa Monica, California.

In addition to these, Trever Boughton and members of the Aviation Historical Society of Australia are presently attempting to salvage 5-AT-60 (formerly G-ABHO and VH-UBI) from the New Guinea jungle. It is still in the Lake Myola region where it crashed as a Royal Australian Air Force (R.A.A.F. serial A45-1) ambulance plane in 1942. If the attempts are successful it may some day be rebuilt and placed on display in a Territory War Museum at Port Moresby.

ISLAND AIRLINES

Since purchasing the former XA-HIL in 1966 Island Airlines now holds a number of world's records including the following: (1) They own the oldest Ford Tri-Motor still flying, 4-AT-38, built in September 1928. (2) They own the Ford with the highest number of flying hours, 5-AT-11, with over 22,900 hours total time. (3) They have the pilot with the greatest amount of time flying a Ford; Harold Hauck, with over 11,000 hours in a Ford Tri-Motor. (4) They are the only airline in the world now flying Fords on a daily schedule, and averaging 35,000 passengers per year. (5) They are the only airline in the world which flies children to school every day in a Ford Tri-Motor. (6) They operate the shortest airline in the world with flights averaging ten minutes from take-off to landing.

THE FUTURE

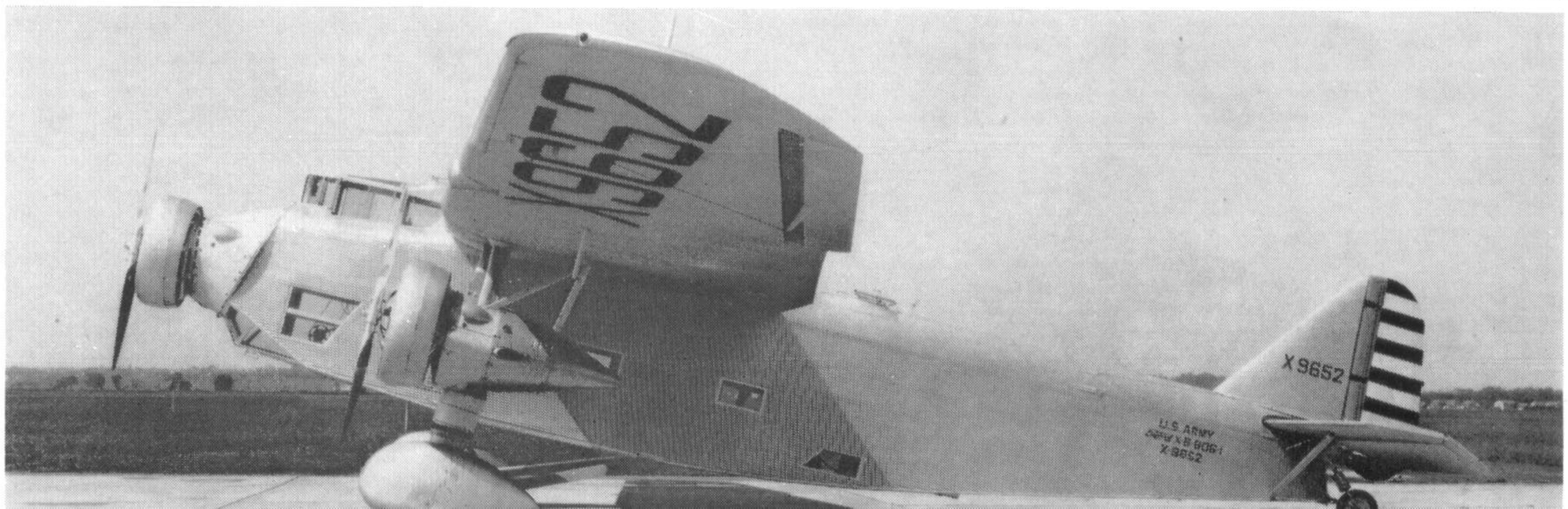
Obviously for those who are fascinated by the Ford the place to go is Port Clinton, Ohio, and the Island Airlines operation in the Lake Erie Islands. Every indication is that this centre of Tri-Motor activity will continue for some time to come. The life expectancy of the Ford is governed by the availability of engines and the quality of overhaul—the basic airframe itself will probably never wear out.

However, if the Aircraft Hydroforming Company of Gardena, California, is able to continue production of their new "Bushmaster 2000" the familiar silhouette of the 5-AT-D will probably be seen for the next 40 years. In 1954 Bill Stout obtained the plans for the Tri-Motor from Henry Ford II and helped establish the Hayden Aircraft Company for the purpose of putting a slightly modified version back into production. After the demise of the Hayden Company the principal stockholders continued to build the prototype plane and it was finally completed in late 1966. The principal differences in N7501V are a greatly enlarged tail group, an enlarged cargo door, and the control cables being placed inside the fuselage. War surplus Pratt & Whitney R-985-AN engines of 450 h.p. each are used for power.

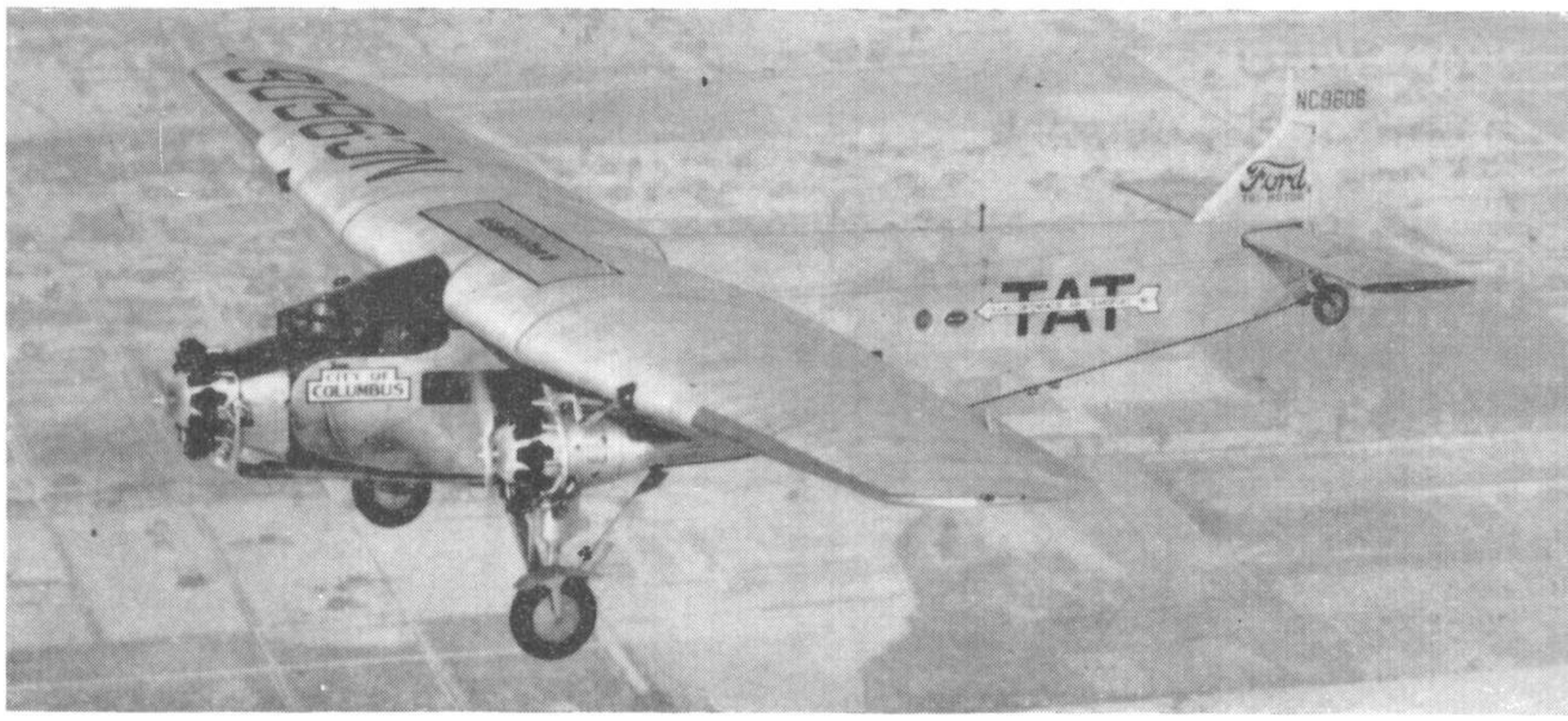
If the STOL characteristics of this plane prove its usefulness in Viet Nam, or elsewhere in jungle areas, we may well see the remarkable sight of these new Tri-Motors joining their half-brothers in aviation's Hall of Fame.

© *William T. Larkins, 1967.*

The little-known Ford XB-906 bomber had four machine guns and internal bomb racks. Before tests were completed it was destroyed in a crash at the factory in September 1931.
(Photo: U.S. Air Force)



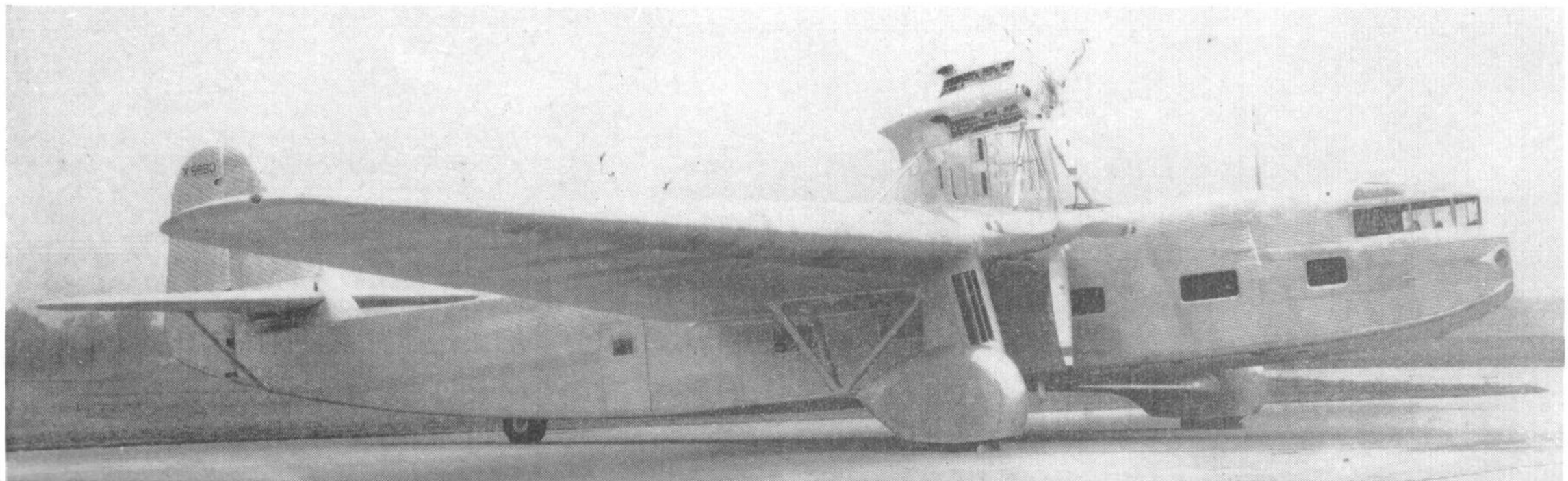
The famous "City of Columbus" (NC9606)—first plane to open TAT's transcontinental air-rail line. It flew the first train passengers from Columbus, Ohio to Los Angeles on 7 July, 1929.
(Photo: P & W Aircraft)



Ford Tri-Motor Production List
Model 4-AT

c/n	Reg.	Model	Built	Original Owner
4-AT-1	NC-1492	4-AT-A	6-26	Ford Motor Company, Dearborn, Michigan.
4-AT-2	NC-4309	4-AT-A	11-26	National Air Transport, Chigago, Illinois.
4-AT-3	NC-3041	4-AT-A	1-27	For Motor Company.
4-AT-4	A7526	4-AT-A	1-27	U.S. Navy, model XJR-1.
4-AT-5	NC-1879	4-AT-A	3-27	Stout Air Services, Detroit, Michigan.
4-AT-6	NC-2492	4-AT-A	5-27	Standard Oil Company of Indiana, Chicago, Illinois.
4-AT-7	NC-1102	4-AT-A	7-27	Maddux Air Lines, Los Angeles, California.
4-AT-8	NC-3115	4-AT-A	8-27	Royal Typewriter Company, New York City.
4-AT-9	NC-1076	4-AT-A	8-27	Stout Air Services.
4-AT-10	NC-1077	4-AT-A	9-27	Sky View Lines, Detroit (to G-CARC).
4-AT-11	NC-1780	4-AT-A	10-27	Marcell N. Rand, New York City.
4-AT-12	NC-1781	4-AT-A	10-27	Maddux Air Lines.
4-AT-13	28-348	4-AT-A	11-27	U.S. Army Air Corps XC-3 (tested as N-3444).
4-AT-14	NC-3443	4-AT-A	12-27	The Texas Company, New York City.
4-AT-15	NX-4542	4-AT-B	3-28	Ford Motor Company (Byrd's South Pole a/c).
4-AT-16	NC-4532	4-AT-B	3-28	Maddux Air Lines.
4-AT-17	NC-4805	4-AT-B	4-28	Gray Goose Air Lines, Chicago, Illinois.
4-AT-18	NC-4806	4-AT-B	5-28	Stout Air Services.
4-AT-19	NC-5092	4-AT-B	4-28	Standard Oil Company of California, S.F.
4-AT-20	NC-5093	4-AT-B	5-28	Rapid Air Lines, Rapid City, South Dakota.
4-AT-21	NC-5492	4-AT-B	5-28	Air Cruises, Detroit, Michigan.
4-AT-22	NC-5493	4-AT-B	6-28	Scenic Airways, Grand Canyon, Arizona.
4-AT-23	NC-5577	4-AT-B	6-28	Maddux Air Lines.
4-AT-24	NC-5578	4-AT-D	6-28	Scenic Airways.
4-AT-25	NC-5809	4-AT-B	7-28	Jefferson Airways, Minneapolis, Minnesota.
4-AT-26	G-CATX	4-AT-B	7-28	British Columbia Airways, Vancouver, B.C.
4-AT-27	NC-5811	4-AT-B	7-28	Queen City Air Lines, Cincinnati, Ohio.
4-AT-28	NC-6892	4-AT-B	7-28	Stout Air Services.
4-AT-29	NC-6893	4-AT-B	8-28	Robertson Aircraft Corp., Anglum, Missouri.
4-AT-30	NC-6894	4-AT-B	8-28	Robertson Aircraft Corporation.
4-AT-31	NC-7117	4-AT-B	8-28	Maddux Air Lines
4-AT-32	NC-7118	4-AT-B	8-28	Maddux Air Lines.
4-AT-33	NC-7119	4-AT-B	8-28	Maddux Air Lines.
4-AT-34	NC-7120	4-AT-B	8-28	Stout Air Services.
4-AT-35	NC-7121	4-AT-B	9-28	Tri-Motored Air Tours, Port Clinton, Ohio.
4-AT-36	NC-7582	4-AT-B	9-28	Maddux Air Lines.
4-AT-37	NC-7583	4-AT-D	9-28	Universal Flyers, Washington, D.C.
4-AT-38	NC-7584	4-AT-B	9-28	Robertson Aircraft Corporation.
4-AT-39	NC-7585	4-AT-B	9-28	Ford Motor Company.
4-AT-40	NC-7586	4-AT-D	9-28	Universal Flyers.
4-AT-41	NC-7683	4-AT-B	9-28	Colonial Western Airways, New York City.
4-AT-42	NC-7684	4-AT-B	9-28	Sky View Lines, Detroit, Michigan.
4-AT-43	NC-7685	4-AT-B	10-28	Nekoosa-Edwards Paper Co., Port Edwards, Wisc.
4-AT-44	NC-7686	4-AT-B	10-28	Kenyon Transportation Co., Morris, Minnesota.
4-AT-45	NC-7687	4-AT-B	10-28	Spokane Airways, Spokane, Washington.
4-AT-46	NC-7861	4-AT-B	7-28	Union Electric Light and Power Company, St. Louis, Missouri.
4-AT-47	NC-7862	4-AT-C	10-28	Sunbeam Air Transport, Denver, Colorado.
4-AT-48	NC-7863	4-AT-B	10-28	Reid, Murdoch & Company, Chicago, Illinois.
4-AT-49	NC-7864	4-AT-B	10-28	Wright Aeronautical Co., Paterson, N.J.
4-AT-50	NC-7865	4-AT-B	10-28	Curtiss Flying Service, New York City.
4-AT-51	NC-9608	4-AT-B	11-28	Curtiss Flying Service.
4-AT-52	NC-9609	4-AT-B	11-28	Curtiss Flying Service.
4-AT-53	NC-9610	4-AT-B	11-28	Curtiss Flying Service.
4-AT-54	NC-9611	4-AT-E	1-29	Pennsylvania Airlines, Pittsburgh, Pennsylvania.
4-AT-55	NC-9612	4-AT-E	1-29	Mamer Flying Service, Spokane, Washington.

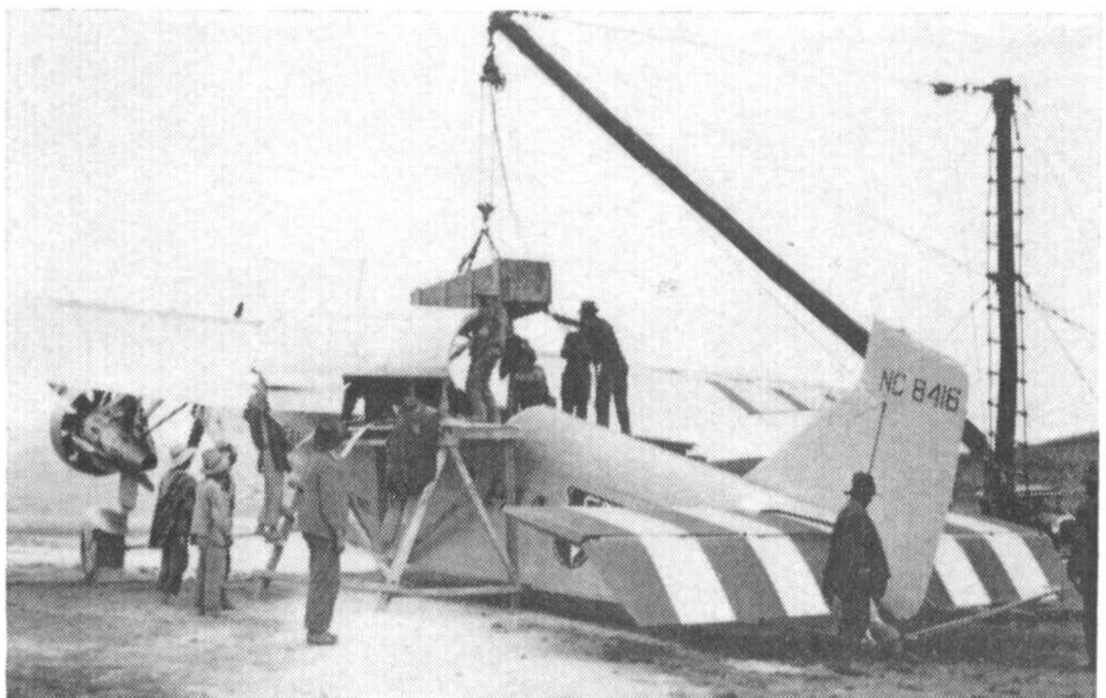
The big 40-passenger model 14-A (NX9660). Powered by three Hispano-Suiza engines and built in 1932. It was ground tested but never flown.
(Photo: Ford Archives)



c/n	Reg.	Model	Built	Original Owner
4-AT-56	NC-9613	4-AT-E	1-29	Sky View Lines, Buffalo, New York.
4-AT-57	NC-9614	4-AT-E	1-29	Firestone Tire & Rubber Co., Akron, Ohio.
4-AT-58	NC-9642	4-AT-E	1-29	Mohawk Airways, Schenectedy, New York.
4-AT-59	A8273	4-AT-E	2-29	U.S. Marine Corps, model JR-2.
4-AT-60	A8274	4-AT-E	2-29	U.S. Navy, model JR-2.
4-AT-61	G-ABEF	4-AT-E	2-29	Ford Motor Company Ltd., London, England.
4-AT-62	NC-8400	4-AT-E	7-29	Curtiss Publishing Co., Philadelphia, Pennsylvania.
4-AT-63	NC-8401	4-AT-E	4-29	Pitcairn Aviation Co., Philadelphia, Pennsylvania.
4-AT-64	NC-8402	4-AT-E	4-29	Ford Motor Company.
4-AT-65	NC-8403	4-AT-E	5-29	Mamer F!ying Service.
4-AT-66	NC-8404	4-AT-E	7-29	Ford Motor Company.
4-AT-67	NC-8405	4-AT-E	8-29	Ford Motor Company.
4-AT-68	EC-KKA	4-AT-E	8-29	Concesionaires de Lineas Aereas Subvencionadas S.A., Madrid, Spain.
4-AT-69	NC-8407	4-AT-E	8-29	Eastern Air Transport, Brooklyn, N.Y.
4-AT-70	NC-8408	4-AT-E	8-29	Eastern Air Transport.
4-AT-71	EC-WIO	4-AT-F	7-31	C.L.A.S.S.A., Madrid, Spain.
72-79				Not used.
4-AT-80	29-220	4-AT-E	5-29	U.S. Army Air Corps, model C-9.
4-AT-81	29-221	4-AT-E	6-29	U.S. Army Air Corps, model C-9.
4-AT-82	29-222	4-AT-E	6-29	U.S. Army Air Corps, model C-9.
4-AT-83	29-223	4-AT-E	6-29	U.S. Army Air Corps, model C-9.
4-AT-84	29-224	4-AT-E	6-29	U.S. Army Air Corps, model C-9.
4-AT-85	29-225	4-AT-E	6-29	U.S. Army Air Corps, model C-9.
4-AT-86	29-226	4-AT-E	6-29	U.S. Army Air Corps, model C-9.

Model 5-AT

c/n	Reg.	Model	Built	Original Owner
5-AT-1	NX-6926	5-AT-A	7-28	Pratt & Whitney Aircraft Co., Hartford, Conn.
5-AT-2	NC-7416	5-AT-A	8-28	Northwest Airways, St. Paul, Minnesota.
5-AT-3	NC-7739	5-AT-A	9-28	Northwest Airways.
5-AT-4	NC-9606	5-AT-B	10-28	Transcontinental Air Transport, New York City.
5-AT-5	NC-9607	5-AT-B	11-28	Transcontinental Air Transport (T.A.T.)
5-AT-6	NC-9643	5-AT-B	11-28	T.A.T.
5-AT-7	NC-9644	5-AT-B	11-28	T.A.T.
5-AT-8	NC-9645	5-AT-B	12-28	T.A.T.
5-AT-9	NC-9646	5-AT-B	12-28	T.A.T.
5-AT-10	NC-9636	5-AT-B	12-28	Maddux Air Lines, Los Angeles, California.
5-AT-11	NC-9637	5-AT-B	12-28	Pan American Airways, New York City.
5-AT-12	X-ABCB	5-AT-B	12-28	Cia Mexicana de Aviacion, Mexico City, Mexico.
5-AT-13	NC-9667	5-AT-B	12-28	Southwest Air Fast Express, Tulsa, Oklahoma.
5-AT-14	NC-9663	5-AT-B	12-28	Robertson Aircraft Corp., Anglum, Missouri.
5-AT-15	NC-9668	5-AT-B	12-28	Stout Air Services, Dearborn, Michigan.
5-AT-16	NC-9638	5-AT-B	12-28	Maddux Air Lines, Los Angeles, California.
5-AT-17	NC-9639	5-AT-B	12-28	Maddux Air Lines.
5-AT-18	NC-9640	5-AT-B	1-29	Maddux Air Lines.
5-AT-19	NC-9641	5-AT-B	1-29	Maddux Air Lines.
5-AT-20	NC-9649	5-AT-B	1-29	T.A.T.
5-AT-21	NC-9647	5-AT-B	1-29	T.A.T.
5-AT-22	X-ABCA	5-AT-B	1-29	Cia Mexicana de Aviacion.
5-AT-23	NC-9664	5-AT-B	1-29	Pan American Airways.
5-AT-24	NC-9665	5-AT-B	2-29	S.A.F.E.
5-AT-25	NC-9666	5-AT-B	2-29	S.A.F.E.
5-AT-26	NC-9669	5-AT-B	2-29	Stout Air Services.
5-AT-27	X-ABCD	5-AT-B	2-29	Cia Mexicana de Aviacion.
5-AT-28	NC-9671	5-AT-B	2-29	S.A.F.E.
5-AT-29	NC-9662	5-AT-B	2-29	S.A.F.E.
5-AT-30	NC-9685	5-AT-B	3-29	Pan American Airways.
5-AT-31	X-ABCE	5-AT-B	3-29	Cia Mexicana de Aviacion.
5-AT-32	NC-9674	5-AT-B	3-29	Ford Motor Company (Crashed 3-19-29).
5-AT-33	NC-9675	5-AT-B	3-29	Colonial Air Transport, New York City.
5-AT-34	NC-9651	5-AT-B	3-29	T.A.T.
5-AT-35	NC-9677	5-AT-B	4-29	Colonial Air Transport.
5-AT-36	NC-9681	5-AT-B	3-29	Colonial Air Transport.
5-AT-37	NC-9650	5-AT-B	3-29	T.A.T.
5-AT-38	29-219	5-AT-B	4-29	U.S. Army Air Corps, model C-4.
5-AT-39	NC-9683	5-AT-B	4-29	S.A.F.E.
5-AT-40	X-ABCF	5-AT-B	4-29	Cia Mexicana de Aviacion.
5-AT-41	NC-9686	5-AT-B	4-29	Maddux Air Lines.
5-AT-42	NC-9676	5-AT-B	4-29	Standard Oil Co. of Indiana, Chicago, Illinois.



Top of page: *A reminder that airports as well as airliners have changed. Pan American-Grace 5-AT-C (NC8416) loading passengers in 1930 at Pacasmayo, Peru.*
(Photo: Pan American)

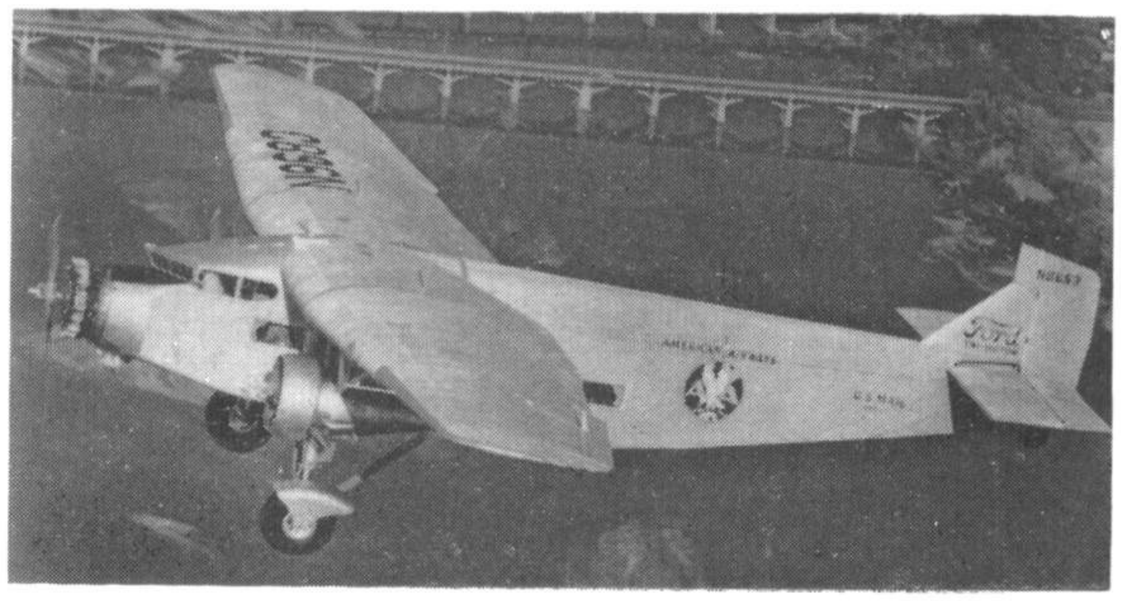
Left: *In 1933-1934 Pan American-Grace flew 740 tons of mining machinery from Cuzco to Huanacopampa, Peru, over the 15,000 foot Andes mountains. Hatch cut in top is 9½ feet long.*
(Photo: Pan American)

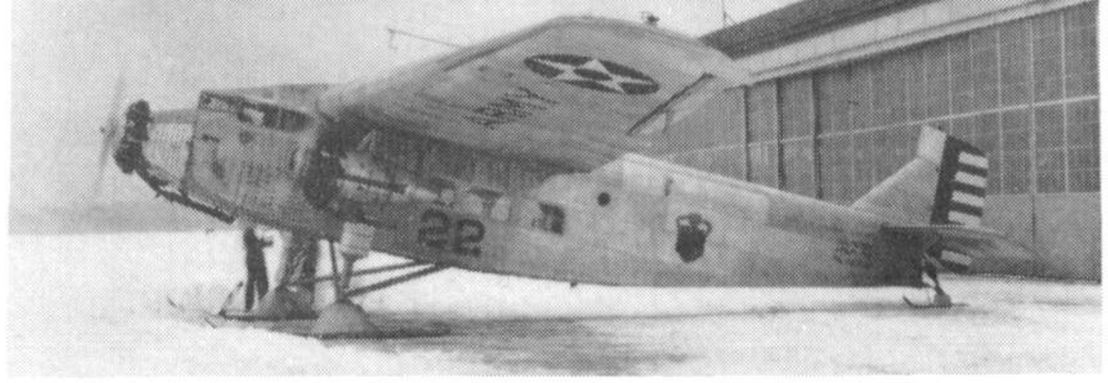
Dr. Joseph Rock, famed China explorer, in front of chartered CNAC 5-AT-D at Wuadukwuadu, Yunan, in February 1936. The flight from Yunanfu was made in 4 hrs. 35 mins. contrasting with his previous trip by land taking 50 days. (Photo: Byron O'Hara)

c/n	Reg.	Model	Built	Original Owner
5-AT-43	NC-9682	5-AT-B	4-29	S.A.F.E.
5-AT-44	NC-9687	5-AT-B	4-29	S.A.F.E.
5-AT-45	NC-9688	5-AT-B	4-29	Pan American Airways.
5-AT-46	NC-9689	5-AT-C	5-29	Maddux Air Lines.
5-AT-47	NC-9690	5-AT-C	5-29	S.A.F.E.
5-AT-48	NC-8410	5-AT-C	6-29	Northwest Airways.
5-AT-49	NC-8411	5-AT-C	6-29	Scenic Airways, Phoenix, Arizona.
5-AT-50	NC-8412	5-AT-C	6-29	Ford Motor Company (European demonstrator).
5-AT-51	NC-8413	5-AT-C	6-29	Maddux Air Lines.
5-AT-52	NC-8414	5-AT-C	6-29	Stout Air Services.
5-AT-53	NC-8415	5-AT-C	6-29	Stout Air Services.
5-AT-54	NC-8416	5-AT-C	6-29	Pan American-Grace Airways, New York City.
5-AT-55	NC-8417	5-AT-C	6-29	New York, Rio & Buenos Aires Line, N.Y.C.
5-AT-56	NC-8418	5-AT-C	6-29	Pan American-Grace Airways.
5-AT-57	NC-9648	5-AT-C	6-29	T.A.T.
5-AT-58	NC-8419	5-AT-C	6-29	Northwest Airways.
5-AT-59	NC-400H	5-AT-C	7-29	Pan American-Grace Airways.
5-AT-60	G-ABHO	5-AT-C	7-29	Ford Motor Company Ltd., London, England.
5-AT-61	NC-402H	5-AT-C	7-29	New York, Rio & Buenos Aires Line.
5-AT-62	NC-403H	5-AT-C	7-29	Pan American Airways.
5-AT-63	NC-404H	5-AT-C	7-29	New York, Rio & Buenos Aires Line.
5-AT-64	NC-405H	5-AT-C	7-29	Parks Air College, East St. Louis, Mo.
5-AT-65	NC-406H	5-AT-C	7-29	Ford Motor Company (China demonstrator).
5-AT-66	NC-407H	5-AT-C	7-29	Government of Chile.
5-AT-67	NC-408H	5-AT-C	7-29	S.A.F.E.
5-AT-68	G-ABHF	5-AT-C	8-29	Ford Motor Company, London.
5-AT-69	NC-410H	5-AT-C	8-29	New England and Western Transportation Company, Stratford, Connecticut.
5-AT-70	NC-411H	5-AT-C	8-29	National Air Transport, Chicago, Illinois.
5-AT-71	NC-412H	5-AT-C	8-29	New England and Western Transportation Co.
5-AT-72	A8457	5-AT-C	8-29	U.S. Navy, model JR-3.
5-AT-73	NC-413H	5-AT-C	8-29	N.A.T.
5-AT-74	NC-414H	5-AT-C	9-29	Ford Motor Company.
5-AT-75	NC-415H	5-AT-C	9-29	Firestone Tire & Rubber Co., Akron, Ohio.
5-AT-76	NC-416H	5-AT-C	9-29	Government of Chile.
5-AT-77	NC-417H	5-AT-C	10-29	Bell Telephone Laboratories, New York City.
5-AT-78	NC-418H	5-AT-C	9-29	Phillips Petroleum Co., Bartlesville, Oklahoma.
5-AT-79	NX-419H	5-AT-C	9-29	Ford Motor Company.
5-AT-79A	NC-8485	5-AT-C	2-31	American Airways, Chicago, Illinois.
5-AT-80	NC-420H	5-AT-C	11-29	N.A.T.
5-AT-81	NC-421H	5-AT-C	12-29	N.A.T.
5-AT-82	A8598	5-AT-C	12-29	U.S. Marine Corps, model JR-3.
5-AT-83	A8599	5-AT-C	4-30	U.S. Marine Corps, model JR-3.
5-AT-84	A8840	5-AT-C	10-30	U.S. Navy, model RR-4.
5-AT-85	ZC-425H	5-AT-C	11-30	Government of Chile.
5-AT-86	NC-426H	5-AT-C	11-30	N.A.T.
5-AT-87	NC-427H	5-AT-C	11-30	N.A.T.
5-AT-88	CV-FAI	5-AT-C	1-30	Prince Bibesco, F.A.I.
5-AT-89	NC-429H	5-AT-C	2-30	H. H. Timken, Canton, Ohio.
5-AT-90	NC-430H	5-AT-C	3-30	Continental Oil Co., Ponca City, Oklahoma.
5-AT-91	31-401	5-AT-D	12-30	U.S. Army Air Corps, model C-4A.
5-AT-92	31-402	5-AT-D	1-31	U.S. Army Air Corps, model C-4A.
5-AT-93	31-403	5-AT-D	2-31	U.S. Army Air Corps, model C-4A.
5-AT-94	NC-8486	5-AT-C	2-31	Colonial Western Airways, N.Y.C. (6-AT-3).
5-AT-95	31-404	5-AT-D	2-31	U.S. Army Air Corps, model C-4A.
5-AT-96	NC-422H	5-AT-C	12-30	N.A.T.
5-AT-97	NC-424H	5-AT-D	2-31	N.A.T.
5-AT-98	NC-431H	5-AT-D	3-31	Pacific Air Transport, Oakland, California.
5-AT-99	NC-432H	5-AT-D	4-31	Marshal Chang Hsueh-Liang, Peiping, China.
5-AT-100	NC-433H	5-AT-D	4-31	Ford Motor Company.
5-AT-101	NS-1	5-AT-D	5-31	Bureau of Air Commerce, Washington, D.C.
5-AT-102	NC-435H	5-AT-D	4-31	Pacific Air Transport.
5-AT-103	NC-436H	5-AT-D	5-31	N.A.T.
5-AT-104	NC-437H	5-AT-D	5-31	Pacific Air Transport.
5-AT-105	9205	5-AT-D	6-31	U.S. Marine Corps, model RR-5.
5-AT-106	NC-439H	5-AT-D	4-31	Pacific Air Transport.
5-AT-107	G-ACAE	5-AT-D	7-31	Ford Motor Company, London.

Right: *American Airlines beautifully restored 5-AT-B which has made numerous trips around the United States in the past three years. During her middle age she flew in Honduras, Nicaragua and Mexico.* (Photo: American Airlines)

Below: *5-AT-60 in the colours of British Air Navigation Company in 1934. Formerly owned by Lord Lovelace; went to New Guinea in 1935 and ended up in the Royal Australian Air Force in World War II.* (Photo: Larkins Collection)





Above: *Army C-9, 29-222, on skis. Photo taken in March 1930 when the Tri-Motor was assigned to the First Pursuit Group, Selfridge Field, Michigan.* (Photo: Ford Archives)

Left: *TACA diesel oil tanker (5-AT-18) at Alamacamba, Nicaragua, in 1942. Cabin was sealed off requiring permanent ladder for pilots to enter through nose hatch.* (Photo: David Ohlwiler)

c/n	Reg.	Model	Built	Original Owner
5-AT-108	NC-9653	5-AT-D	5-31	Pacific Air Transport.
5-AT-109	NC-9654	5-AT-D	3-32	Ford Motor Company.
5-AT-110	NC-9655	5-AT-D	6-31	Pacific Air Transport.
5-AT-111	NC-434H	5-AT-D	7-31	N.A.T.
5-AT-112	NC-438H	5-AT-D	3-32	S.C.A.D.T.A., Barranquilla, Colombia.
5-AT-113	9206	5-AT-D	7-31	U.S. Navy, model RR-5
5-AT-114	NC-9657	5-AT-D	3-33	N.A.T.
5-AT-115	NC-9658	5-AT-D	4-33	Pan American Airways.
5-AT-116	NC-9659	5-AT-D	6-33	Pan American Airways (last Ford built).

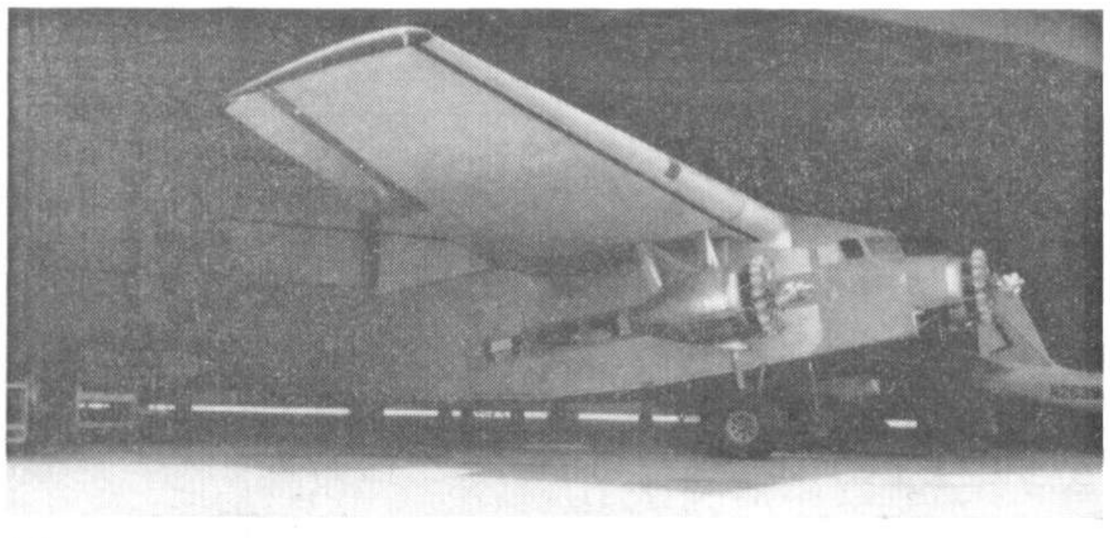
MISCELLANEOUS

c/n	Reg.	Model	Built	Original Owner
6-AT-1	G-CYWZ	6-AT-AS	5-29	Department of National Defence, Ottawa, Canada.
6-AT-2	NC-8485	6-AT-A	5-29	Ford Motor Co. To 7-AT-1 in 8-29; further modified to 5-AT-79A in February 1931.
6-AT-3	NC-8486	6-AT-A	6-30	Ford Motor Co. Modified to 5-AT-94 in 7-31. Also known as "5-AT-C Special No. 3".
XB-906-1	NX-9652	XB-906	4-31	Ford Motor Company (bomber).
7-AT-1	NC-8485	7-AT	8-29	Ford Motor Company; to 5-AT-79A.
8-AT-1	NX-8499	8-AT	3-30	Ford Motor Company. Single engine freighter version of 5-AT-C, to Pacific Alaska Airways.
9-AT-1	NC-423H	9-AT	3-30	Ford Motor Company. Modified from 4-AT-39.
11-AT-1	NX-8404	11-AT	3-30	Ford Motor Co. Modified to 4-AT-B in 7-34.
13-A-1	NC-433H	13-A	3-31	Ford Motor Co. Modified to 5-AT-D in 9-32 and sold to Pan American-Grace Airways.
14-A	NX-9660	14-A	2-32	Ford Motor Company. 40-passenger.

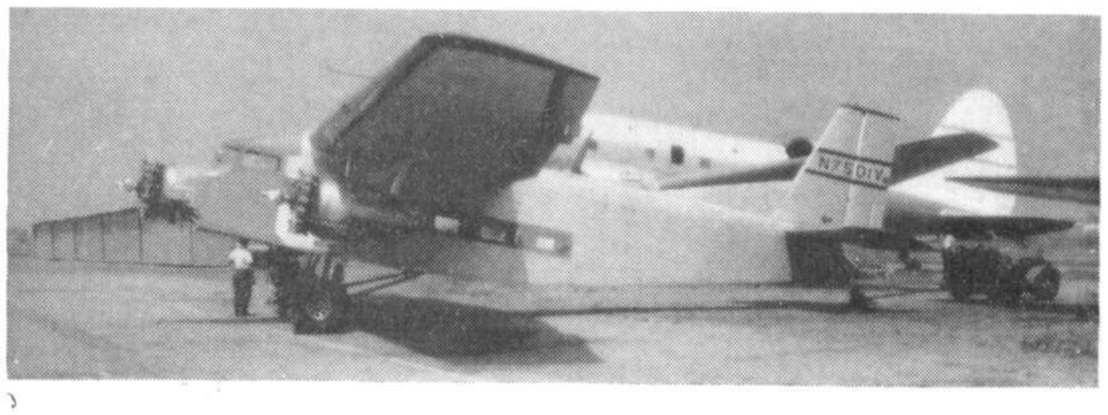
Model Designations of Ford Tri-Motors

Model	c/n	Engines (horse-power)	Description
3-AT	1	3 Wright J-4 (200)	Liberty-powered "Air Pullman" redesigned with three engines, two in the wings. One only. Burned up in early hangar fire.
4-AT-A	1-14	3 Wright J-4 (200)	All new design. 4-AT-1 started with open cockpit and half-circle windows.
4-AT-B	15-53	3 Wright J-5 (220)	12-place passenger plane with increased wing span, weight and performance.
4-AT-C	47	1 P & W Wasp (400), 2 Wright J-4 (200)	4-AT-B modified with Pratt & Whitney Wasp engine in the nose. One only; crashed.
4-AT-D	24	3 Wright J-4 (200)	4-AT-B with larger 5-AT-A wing root.
4-AT-D	37	1 Wright J6-9 (300), 2 Wright J-5 (220)	15-place plane with larger nose engine.
4-AT-D	40	3 Wright J-6 (300)	
4-AT-E	54-70	3 Wright J6-9 (300)	Increased power and performance.
4-AT-E	80-86	3 Wright J6-9 (300)	For Army Air Corps as model C-9.
4-AT-F	71	3 Wright J6-9 (300)	Last 4-AT built, rear pilots windows changed.
4-AT-G	66	3 Packard Diesel (225)	4-AT-66 modified, re-designated 11-AT.
5-AT-A	1-3	3 P & W Wasp (420)	4-AT-B with increased wing span and power, 13-place. 5-AT-1 later rebuilt to 5-AT-C.
5-AT-B	4-45	3 P & W Wasp C-1 or SC-1 (420)	15-place transport with increased weight.
5-AT-C	46-96	3 P & W Wasp C-1 or SC-1 (420)	17-place transport with increased weight. Some built as Club models.
5-AT-CS	69, 74, 75, 81	3 P & W Wasp (420)	Seaplane with Aircraft Products No. A-27000 twin floats.
5-AT-D	97-116	3 P & W. Wasp (420-450)	Increased weight and height, revised rear pilots windows, square cabin door. Non-transport Club models known as "5-D".
5-AT-DS	114	3 P & W Wasp (420)	One seaplane with Edo No. 43-14060 floats.
5-AT-E	none	3 P & W Wasp (420)	Proposed design for 5-AT with outboard engines in the wings.
6-AT-A	1-3	3 Wright J-6 (300)	Model 5-AT-C with Wright J-6 engines.
6-AT-AS	1	3 Wright J-6 (300)	Seaplane with Brewster floats, to R.C.A.F.
7-AT-A	1	1 P & W Wasp (420), 2 Wright J-6 (300)	6-AT-2 modified to use Wasp in nose.
9-AT	1	3 P & W. Wasp Jr. (300)	4-AT-39 modified with engine change.
11-AT	1	3 Packard Diesel (225)	4-AT-G re-designated.
12-A	none	1 Hispano Suiza (1000), 2 P & W Hornet (575)	Proposed design for modified 10-A, not built.
13-A	1	1 Wright Cyclone (575), 2 Wright J-6 (300)	5-AT-100 with engine change.
14-A	1	1 Hispano Suiza (1100), 2 Hispano Suiza (715)	Design 10-A changed to tri-motor; built and ground tested, never flown.
XB-906	1	3 P & W Wasp SR-1340 (450)	5-AT-C re-designed as bomber for Army Air Corps. Crashed during factory tests.

* *Model 8-AT was a single-engine version of the 5-AT-C built as a cargo plane. Model 10-A was a four-engine design using P & W Hornets—not built.*



The new "Bushmaster 2000", based on the 5-AT-D design, completed after 11 years work. Currently being prepared for flight tests at Long Beach, California. (Photo: Ralph Brown)



5-AT-B with war-surplus BT-13 engines and airscrews; flown by TATSA for San Luis Mining Co. between Tayoltita and Mazatlan, Mexico, 1951.

U.S. Army Air Corps C-9, A.C. 29-226, hospital aircraft assigned to 60th Service Sqn., 1930.

U.S.A., four wing positions.

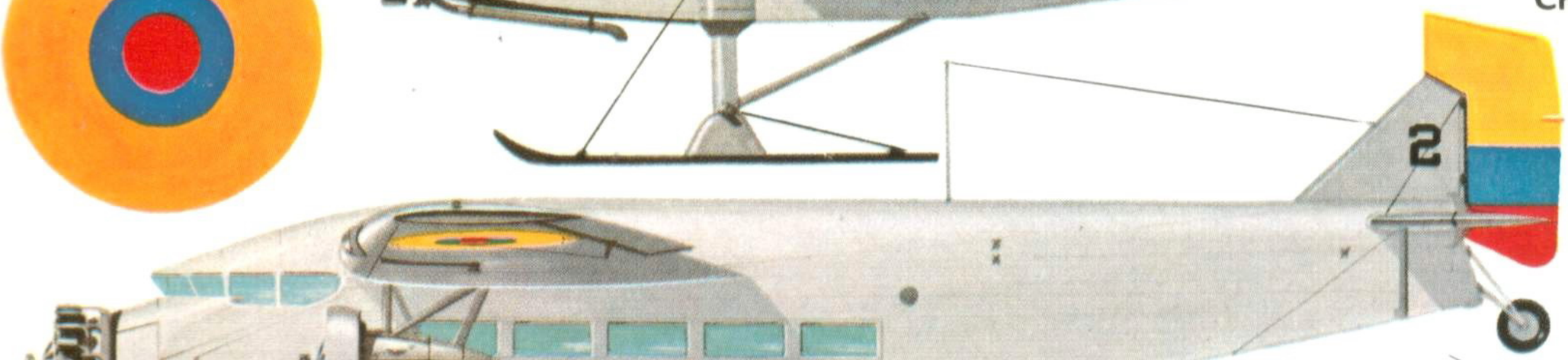
60th Service Sqn.

U.S. Marine Corps RR-4 transport assigned to Aircraft Two, Fleet Marine Force, San Diego, 1935. Few Fords had NACA cowlings on all three engines.

6-AT-A, G-CYWZ of Canadian Dept of Defence, 1929. Operated on wheels, floats and skis; used as forest insect duster, 1929-31. Became CF-BEP after sale by Government as surplus.

Chile four wing positions.

5-AT-CS ambulance aircraft of Chilean Air Force, 1931. Aircraft fully equipped including installation of operating table.



5-AT-D staff aircraft of U.S. Department of Commerce, Aeronautics Branch, 1931.

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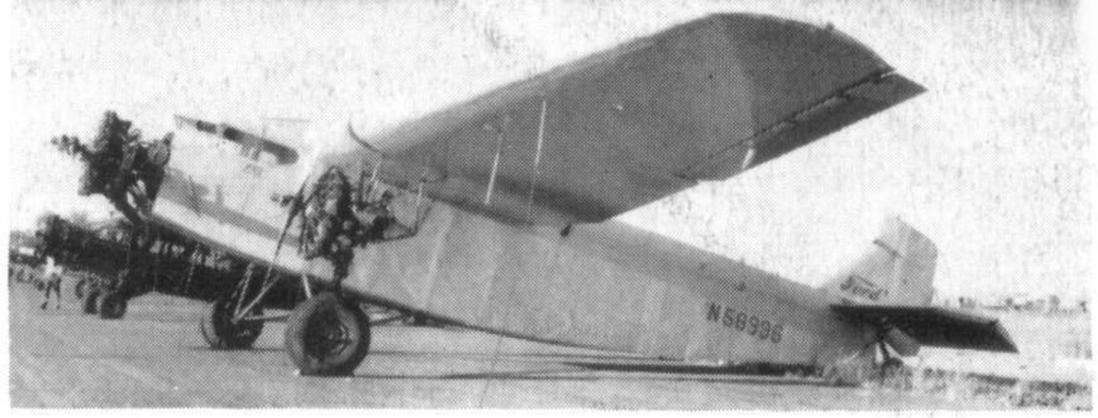
The venerable N414H parked in front of the nose of a Boeing 707 graphically illustrates the difference in size and design of transports in just 25 years. (Photo: W. T. Larkins)

Admiral Bird's 4-AT-15 (NX4542) as it appears today in the Henry Ford Museum at Dearborn. The first plane to fly over the South Pole—on 28-29 November, 1929.
(Photo: Ford Museum)



A one-only Ford with "smooth-skin" replacing normal corrugated metal. 5-AT-8 (as XB-NET) was rebuilt in Mexico City in 1951 by Torres Landa; is now owned by Bill Harrah of Reno, Nevada, as N58996. (Photo: L. S. Smalley)

N8407 was fitted with two 275 gallon borate tanks in 1957. Pilot-operator Glen Higby used it to fight forest fires in the Boise (Idaho) National Forest. (Photo: U.S. Forest Service)

Ford Tri-Motor Specifications

	4-AT-E Land Plane	5-AT-C Land Plane	5-AT-C-S Sea Plane	6-AT-C-S Sea Plane	7-AT Land Plane
Weight:					
Gross	10,130 lbs.	13,500 lbs.	13,500 lbs.	12,500 lbs.	12,910 lbs.
Empty (Completely equipped for passenger service)	6,500 lbs.	7,500 lbs.	8,900 lbs.	8,250 lbs.	7,280 lbs.
Load:					
Disposable	3,630 lbs.	6,000 lbs.	4,600 lbs.	4,250 lbs.	5,630 lbs.
Pay	1.725 lbs.	3,743 lbs.	2,343 lbs.	2,344 lbs.	3,380 lbs.
Speed:					
Maximum	130 m.p.h.	135 m.p.h.	128 m.p.h.	120 m.p.h.	134 m.p.h.
Cruising	107 m.p.h.	112 m.p.h.	106 m.p.h.	100 m.p.h.	110 m.p.h.
Stalling	57 m.p.h.	64 m.p.h.	64 m.p.h.	61·5 m.p.h.	60 m.p.h.
Range:					
Radius of action (Std. fuel cap.)	570 miles	510 miles	490 miles	535 miles	615 miles
Climb:					
Rate of climb at sea level	* 920 ft./min.	* 1,100 ft./min.	—	650 ft./min.	* 880 ft./min.
Climb from sea level in 10 min.	* 7,200 ft.	* 8,200 ft.	—	5,000 ft.	* 6,800 ft.
Ceiling:					
Service, 3 motors	* 16,500 ft.	* 17,300 ft.	14,500 ft.	11,000 ft.	* 14,100 ft.
Absolute, 3 motors	* 18,600 ft.	* 19,100 ft.	—	—	* 16,000 ft.
Absolute, any 2 motors	10,000 ft.	8,950 ft.	—	—	6,300 ft.
Dimensions:					
General—Span	74 ft. 0 in.	77 ft. 10 in.	77 ft. 10 in.	77 ft. 10 in.	77 ft. 10 in.
Length	49 ft. 10 in.	49 ft. 10 in.	51 ft. 4 in.	50 ft. 6 in.	49 ft. 10 in.
Height	11 ft. 9 in.	12 ft. 0 in.	14 ft. 6 in.	14 ft. 1 in.	12 ft. 0 in.
Tread	16 ft. 9 in.	18 ft. 7 in.	14 ft. 9 in.	14 ft. 4 in.	18 ft. 7 in.
Cabin— Width, average	4 ft. 6 in.	4 ft. 6 in.	4 ft. 6 in.	4 ft. 6 in.	4 ft. 6 in.
Height, average	6 ft. 0 in.	6 ft. 0 in.	6 ft. 0 in.	6 ft. 0 in.	6 ft. 0 in.
Length	16 ft. 3 in.	18 ft. 9 in.	18 ft. 9 in.	18 ft. 9 in.	18 ft. 9 in.
Volume	461 cu. ft.	529 cu. ft.	529 cu. ft.	529 cu. ft.	529 cu. ft.
Area— Wing	785 sq. ft.	835 sq. ft.	835 sq. ft.	835 sq. ft.	835 sq. ft.
Wing Loading	12·90 lbs. per sq. ft.	16·1 lbs. per sq. ft.	16·2 lbs. per sq. ft.	14·9 lbs. per sq. ft.	15·46 lbs. per sq. ft.
Passenger Accommodation:					
Seats (removable) number	11	13 to 15	13	12	13
Baggage space	30 cu. ft.	30 cu. ft.	30 cu. ft.	30 cu. ft.	30 cu. ft.
Fuel and Oil:					
Gasoline capacity (standard)	231 gal.	277 gal.	277 gal.	231 gal.	281 gal.
Oil capacity	24 gal.	34 gal.	34 gal.	24 gal.	30 gal.
Power:					
Engines	3, Wright J-6	3, Wasp	3, Wasp	3, Wright J-6	2, Wright J-6 300 h.p. each 1, Wasp 425 h.p.
Total power	900 h.p.	1,260 h.p.	1,260 h.p.	900 h.p.	1,020 h.p.
Power Loading—2 Engines	16·88 lbs. per h.p.	15·9 lbs. per h.p.	15·9 lbs. per h.p.	20·8 lbs. per h.p.	17·80 lbs. per h.p. C. & Ob.
3 Engines	11·25 lbs. per h.p.	10·6 lbs. per h.p.	10·60 lbs. per h.p.	13·9 lbs. per h.p.	12·59 lbs. per h.p.
Propellers	Metal	Metal	Metal	Metal	Metal
Starters	Hand Inertia	Hand Inertia	Electric Inertia	Electric Inertia	Hand Inertia

* *Corrected to Standard Atmosphere 29·92 in. Hg. 59°F.*

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